

DRAFT
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION ACTIVITIES
AND CULTURAL RESOURCES WORKBOOK

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1.0 INTRODUCTION

This Workbook for Burned Area Emergency Stabilization and Rehabilitation (ESR) was developed to assist federal agencies in considering cultural resources when conducting post-fire activities to stop or minimize further damage to property and resources, as well as rehabilitate the landscape. In particular, this workbook is offered as a source of ideas for developing a Cultural Resource Element to Fire Management Plans that describes ESR procedures for considering cultural resources. This workbook is intended as support for a [*Programmatic Agreement on the Treatment of Historic Properties That May Be Affected by Fire Management Activities In Accordance With The Federal Wildland Fire Management Policy of 1995*](#) (Agreement), designed to satisfy National Historic Preservation Act Section 106 responsibilities on federal lands within agencies of the Departments of Agriculture and Interior for fire management activities.

1.1 AGENCY GUIDANCE

Various agencies of the Departments of Agriculture and Interior have, over the last decade, issued policy and guidance statements in an effort to help direct activities to meet the intent of the ESR authority. These policy and guidance documents have varied in the activities that are purportedly funded or allowable under ESR. In an effort to bring consistency to decision-making and implementation of ESR activities, an *Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook* has been developed. This workbook and the Burned Area Emergency Stabilization and Rehabilitation Technical Reference can be found at the following internet addresses:

<http://fire.r9.fws.gov/ifcc/esr/handbook/default.htm>

<http://fire.r9.fws.gov/fcc/Esr/TechRef/Default.htm>

This ESR Workbook follows closely the ESR Handbook and excerpts relevant text where appropriate.

The USDA Forest Service provides an online course for Burned Area Emergency Recovery at the following internet address:

<http://www.fs.fed.us/r5/smokey2/baer/index.html>

1.2 EMERGENCY STABILIZATION AND REHABILITATION ACTIVITIES

Acronymy

Recent years have witnessed changes in the title of program names for emergency activities related to recovery from wildland fire. The traditional name, Burned Area Emergency Recovery (BAER) has given way to the new name Burned Area Emergency Stabilization and Rehabilitation, variously acronymed as BAR and ESR. Agency manuals, handbooks and guidance has lagged behind new terminology, resulting in multiple terms for the same program. For this reason, the terms BAER, BAR, and ESR are interchangeable for the purpose of this

workbook, although an effort is made to apply the term in current use by a specific agency when discussing that agency's program.

Objectives

Definitions

Stabilization. Stabilization consists of actions to alter the landscape or items in the landscape that have been affected by the fire to prevent further injury, loss of property, and damage to resources. These actions may be either treatments for non-cultural objectives or treatments specifically to prevent further loss to cultural resources. Stabilization occurs either during the duration of the fire response or within three fire seasons after the fire is suppressed. Rehabilitation occurs over a much longer period of time.

A variety of stabilization measures may be applied. Immediate stabilization erosion control measures may be applied by fire crews to prevent obvious immediate damage from water runoff after fires. For example, trails are often water bared, road ditched may be regraded, fire roads may be cross-ditched to prevent gullying and limit access, and hazard trees may be cut.

ESR treatments include the stabilization of hillsides and watersheds to prevent erosion and flooding; the enlargement of culverts to control runoff; the replacing of fences; and the reseeding of areas. Cultural resources can be protected from damage through on- or off-site stabilization measures.

Long-term post-fire efforts to repair or improve lands unlikely to recover naturally from wildland fire damage, or to repair or replace fire damaged facilities. The purpose of rehabilitation is either to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans, or if that is infeasible, then to restore or establish a healthy, stable ecosystem in which native species are well represented" (621 DM 1.3). Rehabilitation actions must be related to damage or changes caused by a wildland fire.

Rehabilitation refers to "Long-term post-fire efforts to repair or improve lands unlikely to recover naturally from wildland fire damage, or to repair or replace fire damaged facilities. The purpose of rehabilitation is either to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans, or if that is infeasible, then to restore or establish a healthy, stable ecosystem in which native species are well represented" (621 DM 1.3). Rehabilitation actions must be related to damage or changes caused by a wildland fire. Rehabilitation occurs in both short- and long-term timeframes.

- Direct Suppression impact rehabilitation. As a fire is winding down, direct impacts resulting from suppression such as handlines, dozerlines, safety zones, helispots, spike camps and base camps are corrected. In many cases these areas have been subjected to ground disturbance. As part of the immediate restoration fire crews recontour disturbed areas to prefire contours and rake soils to encourage revegetation.

- Long term resource rehabilitation. These are actions or programs to address long term alteration to the ecology as result of the fire action. Rehabilitation refers to long-term post-fire efforts to repair or improve lands unlikely to recover naturally from wildland fire damage, or to repair or replace fire damaged facilities.

ESR activities are distinguished from Fire Suppression Activity Damage Rehabilitation, which are the actions taken by the suppression incident organization as soon as possible prior to demobilization to rehabilitate lands damaged by suppression activities. Efforts to assess damage, prevent further damage, or rehabilitate cultural resources damaged by fire suppression activities are initiated by the suppression incident organization.

Additional definitions for the Interagency BAER/ESR Program are offered in Attachment 1.

Minimum Critical Needs

The objective of ESR is to alleviate emergency conditions and to mitigate significant threats to life, property, and downstream values. Treatments are intended to protect, not to replace resources. ESR treatments are intended to address emergency conditions resulting directly from the fire. ESR treatments must be immediate, the minimum treatment necessary, and effective. Often it is difficult to clearly describe the main purpose of a proposed rehabilitation treatment. For example, Road and Trail maintenance often includes elements of erosion control, but road maintenance is only authorized as emergency rehabilitation treatment to the extent that it is specifically tied to the burn emergency described in the FS 2500-8 request. Likewise, replacement of a facility may have an aspect of public safety, but facility replacement would have to be the minimum alternative possible to qualify for emergency spending authority.

1.3 FUNDING

Emergency actions taken after a wildland fire to stabilize and prevent unacceptable resource degradation or to minimize threats to life or property resulting from the fire are funded by the Wildland Fire Operations Activity within the Wildland Fire Management Appropriation. The agencies are generally cautious and conservative with the BAER or ESR spending authority. Periodic memos alter funding policy, as in the case of a May 5, 2003 memorandum from the Assistant Secretary of the Interior to the directors of the BLM, BIA, NPS, and Fish and Wildlife Service outlining a new interim policy and procedures for ESR until a new 620 Departmental Manual can be prepared. Given the dynamic nature of federal fire management programs, it is likely that a review of funding policy and procedures would become quickly outdated. The most sound advice that can be offered with regard to funding is to seek current advice regarding the most recent developments in departmental funding policy and procedures.

A discussion of the evolution of the Forest Service policy on BAER, which probably parallels the experiences of other agencies and helps to explain the agency's current approach, can be found at:

<http://www.fs.fed.us/r5/smokey2/baer/index.html>

For the DOI bureaus, ESR burned area assessments, plan development, and urgent and non-urgent ESR treatment implementation are funded from the Burned Area Rehabilitation subactivity. ESR plan development includes salary for all support personnel (technical specialists and resource advisors) and equipment required to complete the plan. Starting in Fiscal Year 2004, emergency stabilization treatments for the agencies of the Department of Interior will be funded from a new subactivity called Emergency Stabilization within a new Emergency Operations (formerly Wildland Fire Suppression) budget activity. At this writing, USFS, ESR burned area assessments, plan development, and urgent treatment implementation are funded from the Suppression Operations subactivity, but non-urgent types of rehabilitation and long-term restoration work beyond 3 years are funded from the Wildland Fire Management Appropriation, Rehabilitation and Restoration subactivity (i.e., National Fire Plan).

For the Departments of Interior, the new policy states that all funds approved for emergency stabilization projects or treatments will be expended within 365 days from the contral date of the fire. Rehabilitation of fire suppression activity damage is not an ESR activity and is charged to the Suppression Operations subactivity by both Departments.

Funding for ESR plan development and implementation will be provided by the Burned Area Rehabilitation account. It is appropriate to use fire overhead and suppression forces, which are tied to the incident primarily for suppression purposes (i.e., mop up, line patrol, short-term rehabilitation), to help with long-term rehabilitation treatments (seeding, building check dams, etc). This is a most effective manner of utilizing these standby resources. Resources, such as crews, held to the incident when not needed for continued fire threat, can only be funded from the Burned Area Rehabilitation account.

Again, ESR activities are distinguished from Fire Suppression Activity Damage Rehabilitation, which are the actions taken by the suppression incident organization as soon as possible prior to demobilization to rehabilitate lands damaged by suppression activities. Efforts to assess damage, prevent further damage, or rehabilitate cultural resources damaged by fire suppression activities are initiated by the suppression incident organization and are funded by Wildland Fire Operations, Suppression Operations subactivity. Wildland fire suppression damage stabilization and rehabilitation activities for cultural resources are not ESR activities.

ESR planning team activities are an integral part of wildland fire incidents. They are governed and supported by the same wildland fire incident mobilization, resource availability, training, qualifications, and incident business management procedures as other aspects of the incident. Agency administrators and fire managers should understand the logic behind the timely preparation of ESR Plans. Developing ESR plans within 10 working days (multiagency fires) of control of the fire is important for two reasons (extensions can be granted by agency ESR Coordinators).

Emergency stabilization actions need to be completed before next damaging storms and/or spring runoff (to prevent loss of life, property or cultural resources).

It allows for the cost/management effective implementation of both short and long-term rehabilitation efforts by suppression resources attached to the incident.

Program activities (planning meetings, training, etc.) which require involvement by ESR personnel are budgeted and funded through individual agency operating funds. ESR program activities not associated with any individual wildland fire include: preseason standing ESR Team preparation; equipment support for the teams; and training for team members and others for ESR.

Phase	Fire Suppression Activity Damage	Initial Burned Area Assessment and Planning	Urgent Stabilization Treatments	Non-urgent Rehabilitation Treatments	Treatment Effectiveness Monitoring and Reporting	Restoration
USFS	Suppression Operations (SU??)	Suppression Operations (BAER)	Suppression Operations (BAER) (one year or until end of first full growing season after control of the fire the fire)	Rehabilitation and Restoration or other program funding	Suppression Operations (BAER) (up to 3 years after control of the fire)	Rehabilitation and Restoration or other benefiting program funds
DOI	Suppression Operations	Burned Area Rehabilitation	Burned Area Rehabilitation (Emergency Stabilization) (not to exceed 2 full growing seasons after control of the fire)	Burned Area Rehabilitation (Rehabilitation) (not to exceed 3 years after control of the fire)	Burned Area Rehabilitation (Rehabilitation) (not to exceed 3 years after control of the fire)	Benefiting program funds
Examples	Cat lines, water bars	Burned severity mapping	Mulching	Shrub planting	Determine if grass seeding was successful	Major facility repair or replacement

1.4 BAER ESSENTIALS

Appropriate use of Burned Area Rehabilitation funds include:

Emergency Stabilization

- Planning post-fire emergency stabilization actions and ESR Plan development.

- Replacing or repairing facilities essential to public health and safety and replacing or constructing fences or other structures necessary to protect emergency stabilization projects or to prevent further degradation of natural and cultural resources during the project period.
- Physical structures and devices to slow the movement of soil and water downslope (e.g., check dams, culverts, silt fences, log erosion barriers and straw wattles, erosion cloth and soil netting, etc.). These treatments are primarily temporary measures that do not generally require maintenance or are removed after objectives have been met.
- Conducting burned area assessments for threatened, endangered, and other special status species to identify mitigation requirements. Damage assessments and treatments are limited to species that are known to be detrimentally impacted by wildland fire, or those for which there is reasonable expectation of detrimental impacts. Also, there must be reasonable expectation that the detrimental impacts can be mitigated.
- Seeding or planting of shrubs, forbs, and grasses to prevent critical habitat for federal listed threatened or endangered species, or other special status species, from being permanently impaired, or to prevent erosion or mass wasting.
- Seeding or planting of shrubs, forbs, and grasses to facilitate the natural succession of vegetative communities which would likely be subject to immediate and aggressive invasion of non-native invasive species after the fire.
- Seeding or planting trees, only if such actions have been demonstrated to be cost-effective in meeting project objectives of stabilizing watersheds to prevent downstream damage on and off site.
- Use of chemical, biological or mechanical treatments necessary to minimize the establishment or re-establishment of non-native invasive species within the perimeter of the burned area.
- Monitoring and patrolling necessary for public safety and natural and cultural resource protection, if such activities cannot be accomplished within existing capabilities and by shifting priorities.
- Covering, camouflaging, cleaning, burying, or reinforcing historic properties to prevent erosion, weathering, movement, and looting.
- Burned area assessments to assess damage to documented historic properties or those discovered in the course of treating known properties.
- Base 8 salary of non-fire funded agency employees engaged in emergency stabilization planning and treatment implementation.

- Overtime for agency employees engaged in emergency stabilization planning and treatment implementation.
- Legal mandated clearances prior to treatment initiation.

Rehabilitation

- Planning post-fire rehabilitation actions and ESR Plan development.
- Repair or improve lands unlikely to recover naturally from wildland fire damage by emulating historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with approved land management plans.
- Restore or establish a healthy, stable ecosystem even if the ecosystem cannot fully emulate historical or pre-fire conditions.

Tree planting is limited to:

- Facilitating the succession and stabilization of forest ecosystems.
- Re-establishing habitat for federally listed threatened or endangered species, or other special status species.
- Reintroducing or reestablishing native tree species and seed sources lost in a stand replacement fire.
- Regenerating Indian trust commercial timberland identified in an approved Forest Management Plan, and that a certified silviculturalist has determined will not naturally regenerate for more than 10 years after the fire.

Repair or replace fire damage to minor operating facilities (e.g., campgrounds, interpretive signs and exhibits, shade shelters, grazing fences, wildlife guzzlers, etc).

Overtime for agency employees engaged in rehabilitation planning and treatment implementation.

1.5 UNBAERABLE ACTIVITIES

Prohibited uses of Burned Area Rehabilitation funds include:

- Emergency stabilization or rehabilitation treatments not in an approved ESR Plan.

- The expenditure of funds for emergency stabilization treatments carried out beyond the second growing season following control of the fire.
- The expenditure of funds for rehabilitation treatments carried out beyond three years following control of the fire.
- Treatment effectiveness monitoring after two years following control of the fire without submittal of an initial Accomplishment Report.
- Any treatment effectiveness monitoring after three years following control of the fire.
- The planning or replacement of major infrastructure, such as visitor centers, residential structures, administration offices, work centers and similar facilities. Rehabilitation does not include the construction of new facilities that did not exist before the fire, except for temporary and minor facilities necessary to implement burned area emergency stabilization and rehabilitation efforts.
- Damages caused by prescribed fires or wildland fire used to achieve land management objectives.
- Monitoring to determine the short- or long-term response of a resource to the fire (i.e., fire effects monitoring).
- Purchase of accountable/capitalized equipment without documentation that purchasing the equipment is more cost effective than renting equipment and is in the best interest of the government.
- Base 8 salary of fire funded agency employees engaged in emergency stabilization actions.
- Base 8 salary of agency employees engaged in rehabilitation planning and treatment actions.
- Systematic inventories of all known historic properties within the burned area.
- General administrative historic property services (e.g., NHPA compliance reports).
- Treating fuels within the burned area to accomplish fuel management objectives.

It is important to note that departmental or agency administrative decisions to pay for activities out of Burned Area Rehabilitation funds are independent of agency historic preservation mandates. A funded ESR activity may be determined by an agency not to be subject to the requirements of Section 106 of the National Historic Preservation Act because it has no potential to cause effects on historic properties. For example, an agency may determine that monitoring and patrolling necessary for public safety and natural and cultural resource protection, by itself,

is an undertaking that warrants no further considerations under Section 106. Conversely, prohibition on the use of Burned Area Rehabilitation funds for certain activities does not absolve agencies of Section 106 responsibilities or stewardship mandates (e.g., Section 110; 16 U.S.C. 470 Sec. 470h-2). It simply means that funding to conduct these activities must be obtained through other sources.

CULTURAL RESOURCES POLICY

Many disciplines and land management interests lobby and compete for ESR funding in the wake of wildland fire. Without close screening, some have taken advantage of ESR funding opportunities to conduct land management activities that are not emergency stabilization or rehabilitation activities related to wildland fire. While some of these activities may serve the interests of specific resources or land management programs, they do not meet the intent of ESR funding and may sap funding from legitimate ESR efforts. In response, agencies have attempted to define the range of activities that are acceptable for ESR funding. The *Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook* provides general policy statements regarding intent of ESR funding for cultural resource protection, and the specific types of activities that are appropriate for ESR funding. Following is excerpted from the Handbook, Section 6.3.1, Cultural Resource Treatment Standards:

The goal of cultural resource funded under Burned Area Rehabilitation is to stabilize and protect known (documented before the fire) archeological sites, cultural landscapes, traditional cultural properties, cultural values and historic structures from further post fire degradation.

Rehabilitation treatments that disturb the soil surface are reviewed for potential effects on significant cultural resources. The appropriate cultural resource specialist should become involved in treatment planning as early as possible to determine if survey, protection measures, and consultation with Native American tribes and other parties are required prior to treatment. This early coordination is especially important where delays in obtaining cultural clearances could delay or halt timely plan implementation. Where significant historic properties are physically avoided by rehabilitation treatments, the avoided areas can be manually or mechanically treated. Equipment that causes minimum surface disturbance (for example broadcast seeded and seed covered with pickups or four-wheelers with drag chains) is encouraged. Close coordination with the cultural resource office staff personnel may help in this process.

Cultural clearances are addressed early in plan development to ensure that treatments are installed at the proper time. Emergency cultural clearances are covered by Burned Area Rehabilitation funding. Efforts are made to address the clearance questions in a timely manner as this is a constraint to treatment and the subsequent success of the project. Cultural clearances are performed in a cost-effective manner relative to the cultural values at risk. Where appropriate, Tribal input into the development of plans is solicited. Treatments evaluated as *No Historic Property* (e.g. no historic properties present), or as actions permitted under an existing agency programmatic agreement (PA) or memorandum of agreement (MOA) can be undertaken without further State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) consultation. *No adverse effect* treatments can be

undertaken after appropriate consultation with SHPO or THPO. *Adverse effect* treatments should be addressed by the agency National Historic Preservation Act (NHPA) coordinator.

Patrolling necessary for public safety and natural and cultural resource protection. Attention should be given to whether the need is for public awareness contacts or actual law enforcement. For DOI bureaus special situations requiring additional funding for law enforcement may be described in the ESR Plan. For USDA, law enforcement should be accomplished within existing capability and funding authority, or by shifting priorities.

The following are appropriate ESR cultural resource activities funded by Burned Area Rehabilitation:

- A burned area assessment of fire induced unstable soils for their potential to result in the loss of historic properties.
- An inventory of known historic properties and/or unstable areas to determine the appropriate treatments needed. (Systematic inventories of all known historic properties within the burned area is not permitted.)
- The stabilization of known fire damaged historic properties to prevent further degradation. (*The following two sentences from the draft Handbook were edited to make them comport with regulatory language and requirements*). Emergency stabilization treatments should be designed to have no adverse effects, if possible. Expeditious NHPA Section 106 consultation is recommended.
- The assessment of all ESR treatments to determine their effect on historic properties. (Treatments may or may not have an effect).

Some agencies have qualified or added additional provisions to this interagency policy. These agency-specific supplements are found in Chapter 4 of the Handbook, and are reproduced below, by agency.

U.S.D.A. Forest Service Supplemental ESR Policy (Exhibit 4-1)

USDA–Forest Service policy is to assess only the known historical sites, not the whole burned area. BAER funds may not be used for Law Enforcement, patrolling for public safety, or cultural resource protection. This includes covering, camouflaging, cleaning, or burying historic properties to prevent looting. While this activity has merit, Law Enforcement is funded by a separate and distinct line item in USDA–Forest Service.

The Forest Service offers additional information on the following web page:

<http://www.fs.fed.us/biology/watershed/burnareas/>

This web page provides little additional guidance, noting only that appropriate treatment measures for heritage resources include “Consultation with Tribes, State historic preservation offices, and others, as well as the actions needed to stabilize and prevent unacceptable degradation of critical or significant cultural resources.”

Bureau of Land Management Supplemental ESR Policy (Exhibit 4-2)

No specific additions or qualifications to the interagency policy were included for cultural resource studies or treatments.

National Park Service Supplemental ESR Policy (Exhibit 4-3)

Cultural resource damage assessments and treatments are limited to those sites documented before the wildfire occurred, and sites that are discovered incidentally while assessing and treating documented sites. BAER funds cannot be used to conduct systematic surveys of a burn area to document all sites that may have been exposed by the fire. Interim policies for cultural resource assessments and treatments developed during the Dome and Chapin #5 fires will be reviewed by the Fire Management Program Center, with assistance from the Natural Cultural Resource Advisory Group, and standards will be incorporated into the BAER Handbook.

BAER Projects that are designed to mitigate significant impacts on cultural resources and which propose unusual or controversial treatments, or where the effectiveness of proposed treatments is unpredictable, are candidates to be reviewed by the Interagency National Cultural Resources Advisory Group. The decision to seek review and concurrence on such projects from this Group may be made by the Superintendent during the development of the original BAER plan, or during the regional or national approval process.

For NPS BAER projects, all mitigation actions must be completed within two years from the date the original BAER plan was approved. Additional time may be approved if it can be demonstrated that existing treatments have failed, or that it was impossible to install critical treatments within normal time frames. However, justifications must demonstrate that emergency conditions still exist. Under normal conditions, vegetation will recover sufficiently within two years to prevent significant erosion, check the invasion of non-native species, and stabilize ecosystem function. Extensions beyond the two year limit must be approved through normal procedures, and cannot be granted beyond three years from the date of original BAER plan approval.

Bureau of Indian Affairs Supplemental ESR Policy (Exhibit 4-4)

The BIA offers no additional policy guidance regarding cultural resources in this exhibit.

U.S. Fish and Wildlife Service Supplemental ESR Policy (Exhibit 4-5)

No specific policy additions to the interagency policy were included for cultural resource studies or treatments for the Fish and Wildlife Service. This exhibit cites the Department of Interior Departmental Manual (620 DM 3. Service Manual section 095 FW 3.9 is also referenced for supplemental policy guidance, although it offers no additional policy directives or guidance regarding cultural resources. The Service manual is found at:

<http://policy.fws.gov/095fw3.html>

3.0 PROCEDURES

3.1 INTENT OF THE PROCEDURES

The intent of the following procedures is to ensure that cultural resources are systematic and thoughtfully considered when conducting ESR activities. Emergency stabilization procedures generally do not afford the time for agency consultation. Treatment prescriptions often must be implemented as soon as possible to prevent further resource damage. The intent of this discussion is not to remove responsibility of the agency to complete historic preservation mandates. Any regulatory streamlining must be accomplished through an appropriate agreement between land managing and review agencies. This workbook may, however, provide useful ideas for such agreements.

3.2 BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION TEAM

The following is excerpted from the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Section 7.1.

The agency administrator is responsible for Burned Area Emergency Stabilization and Rehabilitation (ESR) Plan development which may include assembling a burned area emergency stabilization and rehabilitation team to conduct burned area assessments and begin plan development. If emergency stabilization actions are anticipated, the ESR team should be assembled and ready to work within sufficient time to complete the emergency stabilization section of the ESR Plan to meet agency timelines.

The disciplines represented by the ESR team vary according to the complexity of the fire and availability of personnel with different skills and backgrounds. Generally the team should include resource specialists (wildlife, ecology, range, watershed, invasive species, historic properties, etc.), a member knowledgeable about soils, rehabilitation, contracting and word-processing. A team member may represent several skills. The inclusion of expertise from cooperating agencies or offices in the team effort is encouraged especially when the needed skills are not available within the agency. When an ESR team is needed on a complex wildland fire or a fire that crosses agency boundaries, a national ESR team may be requested.

Mobilization procedures for a national ESR team is described in the National Mobilization Guide and should be followed to ensure rapid, efficient response to an agency administrator's request. The requesting agency will prepare a delegation of authority for an ESR team to develop and prepare the ESR Plan. Demobilization of an ESR team will be through normal dispatch channels and processes. Depending on workload, a national ESR team may be reassigned directly from one incident to another (after appropriate rest and relaxation).

3.2.1 Mobilization And Command Structure

ESR teams may be mobilized prior to suppression of a wildland fire, and initial activities of the ESR team may be directed toward identifying suppression-related damages before demobilization and the closure of suppression accounts, typically within 90 days of control of the fire. ESR team activities and any rehabilitation of suppression damages should be charged to suppression accounts and is not funded through the Wildland Fire Management Appropriation, Operations Activity, Emergency Rehabilitation Subactivity. When ESR teams are mobilized prior to the control of a fire and during demobilization, the ESR team operates under the authority of the suppression Incident Command. When operating after the fire and demobilization, the ESR team leader functions as the Incident Commander for the rehabilitation function.

ESR activities are an integral part of wildland fire incidents and should be supported by the same mobilization, resource availability, incident business management procedures as other aspects of the incident, and should have functional status within the incident command structure. Once fire suppression demobilization has occurred, the ESR team reports to and is accountable to the Agency Official. A recent paper (anonymous) describes the use of Incident Management Teams to conduct BAER work.

Topic:

Implementation of Burned Area Emergency Rehab (BAER) using Incident Management Teams – An Incident Management Teams Perspective.

Description:

Recent catastrophic landscape scale fires have increasingly utilized Incident Management Teams (IMTs) to organize and complete on-the-ground burned area rehabilitation work identified in BAER plans. Although many IMTs have not had experience in implementing BAER related work, they are very proficient in organizing to accomplish large quantities of work in short time frames. The Central Washington Area IMT has had the unique experience of implementing BAER work on three large fires over the past 7 years including the Tyee Fire on the Wenatchee National Forest in 1994, the Cerro Grande fire on the Santa Fe National Forest and the Valley/Skalkaho fires on the Bitterroot National Forest both in 2000. This paper makes recommendations on how best to accomplish BAER work with IMTs based on these 3 experiences.

Rationale for using IMTs:

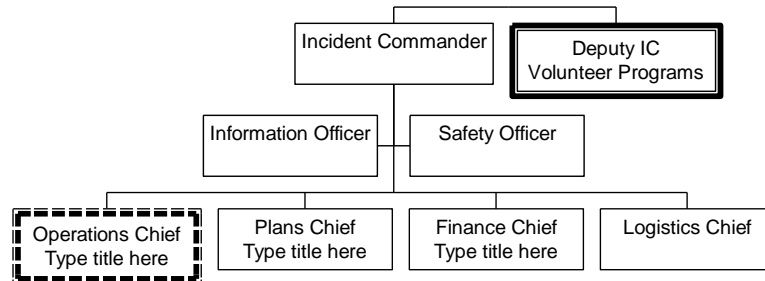
IMTs have much to offer in implementing BAER work. They are all capable of accomplishing a large quantity of work in a short time period, doing work in a quality fashion and getting it done safely. They are also quite flexible in adapting to evolving work and changing work items which often seems to be the norm with BAER plans. Most BAER plans usually require accomplishing a variety of activities in a fairly confined area and IMTs are very good at scheduling work to avoid conflicts.

In addition to these operational advantages, IMTs can help both agency administrators and BAER planners in developing and maintaining a good flow of information. This includes providing an information link between the planning effort and the public in

regards to the importance of this work.

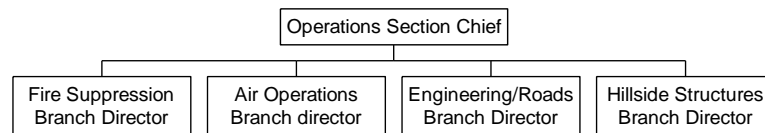
Organizing to do BAER work under the Incident Command System (ICS):

Standard IMTs are organized as follows at the Command and General Staff level:



Many recent BAER efforts have had substantial local community volunteer efforts associated with them. A good way to work them into the ICS structure is to give the Deputy incident commander the coordination responsibility.

One of the keys to successfully managing BAER assignments with IMTs is to organize the Operations section around work activities as follows:



This sets up a ready way of tracking costs by these general work activity categories. More specific cost accounting should be avoided because it cannot be readily tracked though the standard incident cost accounting system that IMTs are familiar with.

Recommendations for BAER planners:

There are a number of things that BAER planners can do to make the implementation job easier. One item that always seems to cause implementation delays is getting BAER plans approved so that funds can be spent. Some method of securing funding without having all the specific activities identified and mapped would be of great help.

BAER planning teams should be sure to include local people in the planning effort. Although there are probably many other advantages of doing this, one that is particularly important to the IMTs is that these folks can be utilized as Resource Advisors (RAs) to the IMT after the planning team is finished. This puts the RAs in a good position to become the link between planning and implementation. These RAs can then concentrate on showing the team what to do and where to do it, and the team can get on with the task of getting to work without having every treatment mapped on the ground before they start. The RAs have an additional role in selectively monitoring accomplishment for quality and recommend any necessary adjustments. It is highly desirable from the standpoint of

the IMT if the RAs stay out of the “how to’s” and leave that up to the team.

Summary:

Although it is usually more costly to do BAER work with IMTs as compared to contracting the work, IMTs offer an excellent way to deal with partially defined work that needs to be accomplished in a very tight timeframe.

Most all IMTs are experts in all phases of the job of fire suppression, and are not used to waiting around to be told what to do and where to do it. Although this is changing as more teams get experience with BAER work, teams are clearly not experts and have to be shown what needs to be done and where. BAER planners and Agency Administrators should recognize the inherent impatience of IMTs and make sure they keep work lined out ahead through the liberal use of RAs as described.

3.2.2 Duties

ESR evaluations are conducted by specially trained interdisciplinary teams to look at all aspects of fire effects on watershed and related resources; soils, hydrology engineering, wildlife, fisheries, cultural resources, range, timber, recreation, etc. The ESR team is assembled to:

- assess on-the-ground conditions;
- identify and define the emergency;
- locate the emergency and prescribe rehabilitation measures; and
- assist local Resource Management Specialists or Wildland Fire Resource Advisors in recommending both long- and short-term treatment strategies.

ESR teams can be national and multi-agency, regional, specific to one agency, or assembled for a particular wildland fire incident. ESR teams are multidisciplinary. Their composition varies according to the nature of the wildland fire and relevant natural and cultural resource issues. Fire effects specialists are often needed to assess fire intensity and the potential for natural revegetative recovery. Hydrologists soil scientists may be needed to conduct assessments on watersheds, landscape, and soil conditions. Biologists and botanists are often needed to determine the extent of damage to, and treatments needed for the recovery of, biotic communities and plant and animal species. There are two primary circumstances for which cultural resource specialists are needed: (1) where there may be ongoing damage to known cultural resources resulting from wildland fire; and (2) where other types of ESR activities, such as slope stabilization or road construction, may damage cultural resources

Qualifications. Every ESR Plan should reflect input from a cultural resources specialist. If the nature of a wildland fire and its damage warrants the inclusion of a cultural resources specialist on the ESR Team, then that specialist must meet the Secretary of Interior’s Professional Qualification Standards for Archeology and Historic Preservation. Appropriate subdisciplinary expertise should be enlisted for ESR assessments. For example, if the fire burned over numerous prehistoric archaeological sites, then a cultural resource specialist in prehistoric archaeology should be include on the team.

The need for a CRS will be determined by the size, complexity, and severity, of the fire as well as the nature of cultural resources known to occur within the burn area. If a cultural resource specialist is not included on an ESR Team, the ESR Plan and any recommendations made regarding cultural resource emergency stabilization and rehabilitation must be reviewed by a specialist meeting the Secretary of Interior's Professional Qualifications Standards. For large and complex fires, cultural resource specialists are ideally divided into two teams based on their training and abilities: (1) a survey and data collection team; and (2) a preservation or treatment team.

The USDA Forest Service has developed a checklist of responsibilities for the cultural resource specialist on a BAER team. Specific duties may vary some between agencies. This checklist is presented in Attachment 2 of this Workbook.

3.3 ESR TASKS

The ESR process may be organized into a series of four tasks as follows:

Task 1: Survey and Assess Damage. Identify emergency cultural resource conditions and possible treatments.

Task 2: Planning. Prioritize problems, determine if problems are treatable, and develop measurable treatment objectives for ESR Plan.

Task 3 : Implement Treatment. Prescribe and do work using treatment plans and standards. Treatment includes monitoring to evaluate the effectiveness of the treatment prescriptions, and documenting the treatments for ESR Accomplishment Reports.

Task 4: Monitor Effectiveness. Inspect cultural resource locations to determine if treatment measures were effective in preventing/ minimizing damage.

3.4 TASK 1: SURVEY AND ASSESS DAMAGE

The objective of the damage assessment phase is to collect enough information to effectively determine what treatment, if any, is needed. Damage assessment allows agency unit managers to locate and respond to the most important and urgent endangered cultural resources. Damage assessment should begin as soon as possible after the burned area is accessible so that treatments can be developed and implemented before irreparable damage to cultural resources occurs.

The scale of the damage assessment effort will vary tremendously from fire to fire, depending on the size, complexity, intensity, and extent of damage imparted by the fire. Damage assessment efforts for large and devastating fires in areas with abundant cultural resources may require the investment of considerable time and labor. Following are workbooks for damage assessment efforts.

3.4.1 Review of Current Available Resources

Before survey or site visits are conducted, the Cultural Resource Specialist on the ESR Team should gather available information on cultural resources within the burn area. In many cases, such information is indispensable in identifying the resources that are appropriate to visit. Existing information may include pre-fire descriptions of cultural resources that are valuable in discriminating previous conditions from those caused by the fire. If the ESR Team is assembled from outside the area, then it may be necessary to consult the agency unit Cultural Resource Specialist or seek out local expertise to obtain information on resources within the burn area.

3.4.1 Survey and Site Recording

Assessing the damage potential for cultural resources may require surface survey, but BAER funding will only support survey under a narrow range of circumstances. Survey of burned areas that are not subject to other ESR activities are generally not funded by ESR. Many unrecorded cultural resources may have burned, but this does not mean that ESR funds can be used to locate such resources.

Generally, areas selected for survey should meet one of the criteria described below.

(1) Areas may be surveyed if they are subject to ongoing erosion and are to be treated by ESR activities to prevent further damage. There should be a reasonable basis for suspecting that an area may be experiencing erosion or ongoing damage prior to conducting cultural resource survey. Coordination with other specialists (hydrologists, soils engineers, etc.) are the most common avenues of learning of assessment areas and the need for survey. Burn intensity maps prepared as an aspect of ESR activities may delineate such areas.

(2) Previously unsurveyed areas may be surveyed for cultural resources if such areas are proposed for ESR activities that may damage cultural resources (e.g., road construction, water bars). Such activities are usually ground-disturbing in nature.

Cultural resources identified during surveys of potential ESR activity areas should be professionally recorded according to current agency standards. In addition, cultural resources encountered while traveling to or from an ESR survey area may be recorded.

These limitations for survey are not meant to discourage post-fire surveys. The issue is whether ESR funding may be used for such surveys. Cultural resource surveys may be proposed as a Element of long-term rehabilitation efforts, but such surveys will be designated as aspects of long-term rehabilitation in ESR Plans. ESR funding of limited areas may be supplemented with other funds to conduct more comprehensive survey to meet other land- and resource-management needs.

3.4.2 Site Visits

Known and previously recorded sites may be revisited to check for fire damage and scope ESR treatments, but the intent of ESR field visits is to collect information by which to determine critical and immediate treatment needs.

Site visits should be made only if there is a reasonable basis to believe that sites are subject to ongoing damage that can be stopped, prevented, or minimized by ESR treatments. Damage that has already occurred, with no risk of additional damage related to the fire, is not sufficient justification for site visitation. For example, cracked groundstone or fractured historic glass cannot be repaired through ESR treatment, and unless the site on which it occurs is threatened by erosion or other fire-caused impact, then a site visit is inappropriate for ESR funding. On the other hand, if there is a reason to believe that an elevated terrace containing such materials is sensitive to post-fire erosion, then a site visit would be well within the purview of ESR activities, warranting a site visit. ESR policy states that sites must be known or recorded to be eligible for visitation. This requirement does not specify the nature of site records, however. It only requires that a site be “known”. Even if knowledge of a site is as minimal as a note in a file or dot on a map, then it may be eligible for visitation, provided there is a reasonable basis to suspect that there exists ongoing or potential fire-related damage can be prevented.

3.4.3 Data Collection

The purpose of ESR damage assessment is to collect information regarding the need for emergency stabilization and long-term rehabilitation, it is not to conduct research regarding the significance of cultural resources. ESR damage assessment is to be accomplished as soon as possible, and collection of research or evaluative data can slow this process, potentially endangering cultural resources through delayed action.

While data collection should focus on the ongoing and potential damage, determining whether damage is occurring to a site may require monitoring changes in condition, which in turn may require the establishment of benchmarks for noting change. Therefore, recording the existing condition of sites and the specific nature of past/existing fire damage may be necessary to document ongoing damage. A description of the physical characteristics of the cultural resources that are being affected is also important in determining whether treatment is possible. Observations that may be relevant, if not necessary, in determining the potential threat of damage to cultural resources resulting from wildfires may include, but are not necessarily limited to:

- determination of the burn severity at and surrounding the site (important in determining erosion potential)
- physical characteristics of cultural resources that were burned and the severity of the damage (damage to surface soils, subsurface soil damage, structural remains damaged, etc.)
- location of the property with regard to flood potential
- pre-fire vegetation
- nature and percentage of effective soil cover
- presence of stump holes, hazard trees, evidence of wind or water erosion
- fire-suppression damage
- loss of protective screening (enhanced exposure to vandalism)
- access to the cultural resource (important in determining feasibility of treatment)

Extensive documentation of cultural resource loss or fire-caused damage does not qualify for the

use of ESR funds unless that documentation is necessary to assess the need for stabilization or rehabilitation.

Sydoriak and Ruby (1998:33) present a list of treatable threats and their indicators. The list is not intended to be comprehensive.

1. Consumption of stumps within a site that may cause heat damage to structures or artifacts, potential erosion of burned root tunnels due to terrestrial runoff into the stump cavity, and raindrop damage to the root cavity or root wad uplift.

Damage Indicators:

- stump holes and/or root pipe(s) are directly above, below or adjacent to a cultural resource site feature

2. Consumption of organic mulch that exposes the site to raindrop impact, overland runoff and erosion by concentrated water flows.

Damage Indicators:

- majority of duff layer was lost (hillslope rilling may be evident)
- gully has been reactivated
- water is standing in one or more site features

3. Trees killed by fire that provide root-mass stability and soil moisture removal on an otherwise mobile soil. Mobile soils could then slip or slide as roots deteriorate and soil moisture builds up pressure.

Damage Indicators:

- hazard trees are likely to fall on or break apart a cultural resource structural feature in the near future (e.g., < 2 years)

4. Release of hillslope sediments by consumption of organic matter that was the pre-fire stabilizer. Sediment could then flow overland and threaten the site.

Damage Indicators:

- powdery soils are present
- hydrophobic soils are present
- sediment is accumulating above one or more site features
- gully has been reactivated
- former non-living soil stabilizers such as logs on hillslopes and debris jams in channels are absent and erosion of slope threatens site (slope may be at or adjacent to the site)

5. Instream debris jams due to fire effects that could deflect floods into channel banks and cause scour, undercut trees, or cause floods to escape the normal channel.

6. Instream boulder flow deposits that can divert normal streamflow to one side or the other, and incise a new channel parallel to existing channel.

Damage Indicators:

- gravel bars and/or debris in channels will deflect flow toward one or more site features
- lateral channel migration is undermining one or more site features

7. Potential of tree seedlings being established as a result of fire effects. Expect trees to invade where seed source is available. Most trees reproduce better after a fire than before.

8. Site visibility and potential for vandalism or unauthorized artifact collecting is increased.

- site features are visible from a fire line, trail, overlook, or other public facility
- human remains and associated funerary objects are visible

Some agency units have developed specific procedures and forms for recording archaeological site damage from fire. Yosemite National Park, for example, has developed a Post-Fire Site Damage Assessment Form and a BAER Archeological Site Inspection Record, included as Attachment 3 of this Workbook.

Cultural Landscape Considerations. Cultural landscapes involve the interrelationships of formal design and/or informal/natural setting, structural orientation and other elements of a historic property. Wildfires and the fire suppression efforts may alter or remove such relationships. In most prehistoric sites, the original setting is not known, and the conventional value ascribed to such sites involves their scientific information potential. Therefore, there is generally less potential for wildfires and fire suppression to alter the cultural landscape of prehistoric sites, although important exceptions can be cited. In those cases where known historic landscapes have been previously defined as part of a historic property, or where remaining characteristics of a historic property suggest the presence of a historic landscape, the services of a historic landscape architect should be considered in developing ESR treatments. .

3.4.4 Consulting with Indian Tribes and Others

Consultation with Indian tribes is an important part of ESR damage assessment and planning. The timing of consultation may vary between agency units and even between ESR responses between different fires, depending on the nature of the fire and resulting emergencies. When possible, immediate notification is desirable to identify cultural resources and Traditional Cultural Properties that may hold religious or cultural significance to tribes, prior to actions that may damage those properties. Consultation may have to take place more than once. Initial consultation prior to site visits or survey may be followed by consultation regarding the need for, and methods of, treatment.

A good faith effort must be made to consult with and consider the views of Indian tribes in taking emergency actions that may affect cultural resources. However, there may be instances

where delays in implementing emergency actions for cultural resources will result in their damage or destruction. The agency may develop and implement emergency actions proposed in ESR Treatment Plans in advance of consultation with Indian tribes if the Agency Official determines that ESR Treatment Plan implementation is an essential and immediate response to a disaster that will protect human life or property, including cultural resources.

It is important to remember also, that ethnic groups other than Indian tribes, such as Euro-Americans, Chinese, Hispanics, Japanese, African Americans, etc.), and working groups such as loggers, ranchers, farmers, etc. may have TCPs that can be identified only through consultation. Consultation to identify TCPs should be an important part of the ESR damage assessment and planning phases. Familiarity with a region, its resources, and its people can greatly facilitate the identification of TCPs. If an ESR Team members are external to the region under assessment, consultation with local cultural resource professionals is the best way to quickly determine the potential for TCPs in a burn area.

3.4.6 Identifying Treatment Alternatives

Once damage has been assessed, treatment options need to be considered to avert or minimize threats to cultural resources. Final decisions regarding treatment are made once the damage assessments are completed, during the planning step, when priorities are established, based on treatment costs and values to be protected. The damage assessment is designed to provide information and a range of options that may (or may not) be selected.

The threat to a cultural resource may be a fire-caused phenomenon such as erosion, or it may be the actions taken to stem that erosion. Treatment measures can be used to prevent damage to cultural resources, but treatment measures targeted at other (non-cultural resource) problems may present the threat of damage to cultural resources as well.

There are a variety of treatment measures that may be used to protect and minimize damage to cultural resources. Such treatment measures include: revegetation, mulching, padding or sandbagging cultural resources to prevent erosion; the removal of debris jams in streams; the construction of water bars, log terraces, or earth berms; and the filling of stump cavities to prevent soil piping. Treatment measures that will not involve ground disturbance within the boundaries of a cultural resource are generally preferred. The universe of potential treatment measures is not finite. New methods can and should be applied where they may provide greater protection or may be more cost effective than more traditional methods. Monitoring may be necessary to determine the effectiveness of new methods. The following web links provide information on various BAER treatments and their effectiveness.

http://www.fs.fed.us/rm/pubs/rmrs_gtr63.pdf

<http://forest.moscowfsl.wsu.edu>

<http://www.fs.fed.us/r5/smokey2/baer/index.html>

If methods of archaeological site avoidance or protection are not feasible or practical, data recovery might be considered. However, archaeological excavation is an expensive, time-

consuming, and inherently destructive treatment measure that should be considered only if other treatments will not prevent or minimize damage to a site. Consultation procedures for applying archeological excavation as a treatment measure will vary by agency unit and region, depending upon the regulatory procedures that have been developed (e.g., Programmatic Agreement, ratified Fire Management Plan, the procedures described at 36 CFR 800.3-800.6).

3.4.7 Cost Analysis

It is important to know the cost of implementing treatment measures when considering whether those treatments are feasible and appropriate. There will always be limited resources for ESR activities, so priorities have to be established. If treatment of cultural resources is extremely expensive, then the cost of treatment will be considered against other possible treatments and the value of the resource in determining whether such treatment is warranted. The cost of treatment includes labor, materials, transportation, support services, and any ancillary costs that might be associated, such as monitoring. A cost/risk analysis of proposed treatment actions should be included in each damage assessment to assist decision-makers and reviewing authorities in assessing the proposed actions.

3.5 TASK 2: PREPARING THE ESR PLAN

Emergency stabilization actions are based on ESR Plans developed immediately after a wildland fire. The ESR team begins preparation of the ESR Plan based upon the results of the burned area assessment(s) and agency administrator's input. Once data have been collected on fire-related damage, the threats to cultural resources have been identified, and potential treatments have been identified, the plan is developed using the damage assessment to make decisions regarding treatment. These decisions need to be made quickly, since delays may result in additional resource damage.

The exception to post-fire ESR Plans are programmatic plans. Programmatic plans are developed in advance, occur at the landscape level, and require NEPA compliance and public input. Cultural resource procedures for such programmatic ESR plans may be reviewed as part of the Cultural Resources Element of Fire Management Plans or are subject to Section 106 review following the procedures described at 36 CFR 800.3-800.6.

Development of the ESR Plan generally involves three steps: (1) determining if problems are treatable; (2) ranking and prioritizing cultural resources for treatment; and (3) developing the treatment plans for individual resources.

3.5.1 Determine If Problems Are Treatable

The first step in planning is to determine whether damage is treatable, both physically and economically/practically. If damage is irreparable or untreatable, then ESR treatment should not be considered further. Examples of physically untreatable circumstances include: material that has been consumed; cultural material removed from context (destroyed by a bulldozer, moved by fluvial events); material irreparably altered by heating or smoke (spalled stone, oxidized minerals).

Just because it is possible to treat a resource does not automatically mean that it should be treated. This determination can be difficult and subjective, because it weighs the cost of treatment against the cultural value of the resource, which may vary between individuals and groups, exacerbated by competing demands for funding in the wake of emergencies. Despite our best efforts to quantify or objectify criteria, decisions regarding treatment will be situational. For example, if a threatened cultural resource has extremely high cultural values and it is one of only a few cultural resources subject to threats, then a relatively high treatment cost may be acceptable. Conversely, if that same resource is competing for attention with a variety of similar or other cultural resources with high values, then the Agency Official may decide that treatment is not cost-effective. It is important to understand, to the best of one's ability given the limited available resources, why a cultural resource is, or may be, important. Sometimes the value of a cultural resource is vested in particular attributes that can be protected, even if other attributes may be subject to impact.

Agency units may have existing inventories, historic preservation plans, cultural resource overviews, and National Register of Historic Places (NRHP) nominations that define the relative importance of cultural resources. These sources of information should be used whenever possible.

Formal NRHP evaluations (nominations or determinations of eligibility) generally take too long to be responsive to the needs of ESR. SHPOs are usually willing to treat properties as eligible for the purpose of ESR undertakings, but well-defined procedures should be established. When developing ESR protocols for the Cultural Resources Element of Fire Management Plans, agencies should specify the circumstances and procedures for NRHP eligibility determinations. Such procedures may vary according to the predisposition of individual SHPOs and agency units.

One approach, already specified, is to treat properties as NRHP eligible, unless the agency chooses to formally evaluate a resource if they believe it to be ineligible. While such assumed status may reduce regulatory hurdles, it does little to assist the agency in ranking sites according to their relative importance. It may be an expedient approach in many instances, and allow agencies to act quickly. Another approach is to defer NRHP evaluation if resources can be protected or avoided. Regardless of the approach to NRHP evaluation, the cultural resource specialist must rank the relative importance of cultural resources according to his or her professional experience and knowledge. The reasons for such ranking should be explicit, however.

3.5.2 Rank and Prioritize Cultural Resources for Treatment

Once the feasibility of treatment has been determined, the sites should be ranked for treatment, based on the severity of the threat, the importance of the resource, and the potential that treatment will protect cultural resources. Important sites in imminent danger of damage or destruction, and for which treatment measures are determined feasible, will be highly ranked for treatment.

Once cultural resources are ranked for treatment, the ESR team leader will develop an efficient and logistically feasible plan for ESR activities. It does not always make economic sense to go to

sites in the order that they are ranked, since cultural resources may be clustered and logistical considerations may apply. A balance between treating sites in ranked order and treating them efficiently must be struck by the ESR Team Leader and approved by the Agency Official.

3.5.3 Develop Treatment Plan

The treatment Element of ESR Plans should state the treatment objectives and the specific treatment prescriptions that will meet those objectives. Whenever possible, treatment objectives should also have measurable criteria that can be monitored to determine the effectiveness of the treatments, along with monitoring schedules and procedures.

3.6 TASK 3: IMPLEMENT TREATMENT PRESCRIPTIONS

The next task of ESR involves implementing the treatment prescriptions, including: obtaining the necessary approvals for the proposed Treatment Plan from the Agency Official; prepare for work (e.g., order materials, arrange transportation, schedule work), and implementing the treatment prescriptions. Implementation also includes any monitoring that has been included in the Treatment Plan. Monitoring is essential in determining whether the treatment prescriptions are effective. Based on the results of monitoring, adjustments in treatment can be made to improve the effectiveness of the cultural resource protection measures.

Implementation also includes preparing necessary documentation of the treatment prescriptions. If treatment involves data recovery, a report of findings meeting contemporary professional standards must be prepared and submitted to the SHPO/THPO and Native Americans with interests in ancestral sites, as appropriate.

3.6 TASK 4: MONITORING

Monitoring is a routine aspect of many ESR Plans and should be proposed and implemented when the success of treatment measures is questionable. Monitoring should be scheduled to provide reasonable opportunities to make adjustments or apply additional treatments if initial ESR treatments prove to be ineffective.

Baseline information collected during the ESR assessment phase may or may not be sufficiently detailed to monitor changes in resource condition. If not, such information should be collected during the implementation of ESR treatments, so that further changes in resource condition can be detected during monitoring. Documenting resource conditions will provide long-term monitoring data that may assist the agency in long-term management.

Examples of BAER/ESR reports are offered in Attachment 4 of this Workbook.

3.8 AGENCY CONSULTATION

Each agency or agency unit should develop procedures for agency consultation as an element of the Cultural Resources Element of the Fire Management Plan under the terms of the nationwide PA. In developing consultation procedures, agencies should seek to eliminate or minimize agency consultation with SHPOs/THPOs prior to taking emergency stabilization actions to protect cultural resources. The need for immediate action may preclude standard consultation. In negotiating consultation procedures and schedules with the SHPO/THPO, agencies might remind them that delays in emergency stabilization actions may result in resource loss.

A number of topics should be addressed when developing ESR consultation procedures with the SHPO/THPO, including:

- Incident notification;
- Native American consultation procedures;
- National Register evaluation procedures;
- Standard treatment measures;
- Consultation when treatment is not proposed; and
- Consultation when emergency action is needed to prevent loss of life or property (including cultural resource loss).

**ATTACHMENT 1:
INTERAGENCY BAER/ESR PROGRAM DEFINITIONS**

ATTACHMENT 2:

BAER TEAM MEMBER – HERITAGE RESOURCES POSITION DESCRIPTION – USDA FOREST SERVICE

The Heritage BAER Team Member reports to the BAER Team Leader, and provides heritage resource input into the Burned Area Emergency Rehabilitation Report. Serves as liaison between BAER Team Leader and Heritage Field Crews.

Standard Protocols

Upon notification by dispatcher for an assignment, obtain the following information:

- o Incident Name
- o Incident Order and Request Number
- o Check-in and Reporting Location
- o Phone Numbers (if known)
- o BAER Team Leader
- o Incident Heritage Team Leader
- o Current Situation

Check in at the incident with the check-in/recorder

Check in with BAER Team Leader, and meet to develop priority strategy of involving Heritage Resource objectives within the scope of the BAER Report. The strategy will be developed on both a site-specific, division-specific, and incident-specific level.

Determine resources necessary to achieve the strategy in terms of inventory, monitoring, staffing, etc.

Receive a copy of the Incident Action Plan (can be found in Planning Section)

Coordinate with the Incident Heritage Team Leader to review Suppression Objectives, fire burning occurrence, past and present suppression activities, review BAER objectives to determine if heritage resource values are being adequately addressed.

Acquire from the Incident Heritage Team Leader or other previously designated source the baseline heritage data (i.e., previous survey coverage, site records and reports) including unit Forest's Heritage Resource site record and other forms for field use.

Determine the current data situation and identify data needs.

Brief Heritage Field Crews on BAER Objectives, Heritage Objectives, and strategy to meet both.

Assign field assignments for heritage personnel on a daily basis.

Debrief incoming field teams and brief on assignments for next shift.

Attend daily briefing meetings.

Identify appropriate Division Supervisor for each assignment (if applicable) and check in with that individual to present planned activities in terms of personnel and location. Instruct Heritage field crews to do a radio check at the beginning of each shift on location with the Division Supervisor.

Perform duties to include, but are not limited to, the following:

- o Supervision of Heritage Field Crews
- o Field Data Collection
- o Preliminary Data Accumulation
- o Quality Control of Data Gathering through Field Work including Field Curation of Records
- o Crew Qualifications are met in terms of Fire Line and Professional Qualifications
- o Time Sheets for Incumbent and Heritage Field Crews

Perform duties that may be assigned by the BAER Team Leader

Prepare Heritage Report for inclusion within the BAER Report (FS 2500-8)

Report information to BAER Team Leader by established procedure, and on a daily basis.

Provide briefings to local heritage resource staff as appropriate

Provide all information and objects curated during the incident to local unit heritage resource staff

Provide Heritage Resource Technical Report (i.e., Archaeological Reconnaissance Report) and supporting documentation to local unit heritage resource staff.

Provide incident information and counsel to local unit heritage staff for any Section 106 needs or specific conditions related to the treatments proposed in the BAER report.

Provide any specific conditions for approved treatments to the BAER Implementation Team Leader

Requirements

Training

ICS 100 (or equivalent)

Standards for Survival or “Look Up, Look Down, Look Around”

I-130 – Basic Firefighter Training or equivalent

I-190 – Basic Wildland Fire Behavior or equivalent

Fire Shelter Deployment

Working with Inmates or equivalent

Prerequisite:

GS-193 series at the 9 or 11 Grade Level

Meet the Current Physical Fitness Requirement for BAER Personnel (it is recommended that personnel meet requirement for Fire Line Personnel)

Have completed Heritage-BAER training module

Personal Protective Equipment Requirements

Approved Wildland Firefighting Hardhat with shroud
Nomex Brush Pants and Shirt
Fire Shelter
Leather gloves
Leather Lace-up Boots (min. 8 inch tops) with traction sole
Web gear
Safety Goggles or Safety Glasses
Handheld Flashlight with Batteries
Headlamp with batteries

Required Equipment Supplied by the Heritage BAER Team Member

Silva Ranger compass or Brunton Pocket Transit
Small steel tape measure
Sharpie, pencils, pens
Notebook/graph paper
Hand level/clinometer
Small ruler and protractor
Plastic and paper bags for collecting of diagnostic specimens
Field Container for paperwork
35mm camera

Equipment to be Obtained Before Going Into the Field

USGS 7.5' Series Topographic Map(s)
Where available, equipment to record and transfer data electronically (i.e., GPS/PDAs, etc.)
Radio with incident frequencies and extra batteries
Cloth Tape (30 meter/100 foot)
Shovel
35mm camera film
Blank site record forms
Site records and maps (if applicable)
Incident Action Plan

ATTACHMENT 3:
POST-FIRE ARCHAEOLOGICAL SITE DAMAGE ASSESSMENT FORM EXAMPLES

ATTACHMENT 4: BAER REPORT EXAMPLES

2002 BOUQUET FIRE BURNED AREA EMERGENCY REHABILITATION (BAER) TREATMENTS OF HERITAGE RESOURCES, SANTA CLARA – MOJAVE RIVERS RANGER DISTRICT, ANGELES NATIONAL FOREST, CALIFORNIA

Prepared by
Douglas Milburn
Assistant Forest Archaeologist

DESCRIPTION OF EMERGENCY

The Bouquet Fire

During May 11-15, 2002, a wildfire emergency that became known as the Bouquet Fire Incident burned approximately 4284 acres of predominately chaparral vegetation, damaged two special-use permitted recreation residences, and destroyed several outbuildings located within administrative boundaries of the Santa Clara - Mojave Rivers Ranger District, Angeles National Forest (ANF), Los Angeles County, California. This report provides analysis of Bouquet Fire watershed damage effects to heritage resources and describes heritage resource compliance related to proposed BAER measures.

Potential Effects to Heritage Resources. Research has shown that wildfire incidents have potential to damage or destroy heritage resource properties through (1) direct effects of the fire, including burning and smoke damage; (2) ground disturbing fire suppression and/or rehabilitation measures; (3) erosive soil movement caused by subsequent storm precipitation; (4) increased artifact looting; and (5) unauthorized use of Off-Highway Vehicles (OHVs). These wildfire-related processes may alter the context of archaeological remains vital to any scientific analysis and interpretation and, in the worst cases, have the potential to completely destroy irreplaceable heritage resources. It is clear that direct and indirect effects that wildfires have potential to directly or indirectly affect heritage resources located within the APE.

Primary concerns about specific effects of the Bouquet Fire in terms of significant heritage resources are centered on ground disturbance/soil movement that could change context of remains vital to any scientific analysis/interpretation value or that could bury the remains and prohibit site discovery. The burning of vegetation may also increase visibility of site locations and make them more susceptible to vandalism or open them up to Off-Highway Vehicle (OHV) travel.

Regulation and Authority. Forest Service authority, policy, and direction authorizes the use of BAER funding for protection of archaeological and historic resources from wildfire-caused watershed damage and, also, protection of these resources from various BAER watershed treatments. In addition to development of protection

measures for known heritage resources, archaeological survey/inventory in support of the BAER analysis, including inspection of proposed rehabilitation treatment areas, is also authorized. While BAER treatments are exempted from National Environmental Protection Act (NEPA) analysis, they are not exempt from the processual mandates of Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470 [NHPA]).

HERITAGE RESOURCE OBJECTIVES

Specific heritage resource objectives of this report are:

- (1) Identify all known heritage resource sites impacted by burning of the Bouquet Fire on the Angeles National Forest; and
- (2) Prohibit future damage to Class I and Class II Heritage Resource Sites due to fire-related soil erosion, debris flows, increased site accessibility/visibility to artifact looting/OHV travel, or from implementation of rehabilitation treatments. Class I Heritage Resources are historic and prehistoric resources determined eligible for inclusion to the National Register of Historic Places [NRHP] per criteria in 36 Code of Federal Regulations (CFR) 60.4. Class II sites, all heritage resources that have not been evaluated as to significance, are afforded the same consideration and protection as Class I sites until evaluation takes place (Forest Service Manual [FSM] 2361).

BACKGROUND DATA

Initial Identification Methods

In conformance with standards established for BAER-related heritage resource investigations in southern California, the Bouquet Fire Area of Potential Effect (APE) is identified as encompassing all areas of burned vegetation, unburned areas with potential for fire-related soil erosion and debris flows, and locations proposed for ground-disturbing BAER treatments. Heritage resource site identification and potential watershed damage assessment within the Bouquet Fire APE involved the following methods:

- (1) background search of archaeological site records and inventory reports contained within ANF Heritage Resource files and Geographic Information Systems (GIS);
- (2) field archaeological reconnaissance at the locations of all previously identified heritage resource sites within the APE; and
- (3) field inspections of all proposed ground-disturbing BAER treatment locations not been previously subjected to archaeological survey.

Personnel

Mike McIntyre, Forest Heritage Resource Program Manager provided oversight and guidance to the heritage resource analysis. Douglas Milburn, ANF Archaeologist, conducted background research, carried out field inspections, and wrote this report. Darrell Vance, ANF Archaeologist conducted initial background analytic research and assisted with field work.

Heritage Resources

This section identifies the heritage resources identified within the Bouquet Fire APE as result background data analysis.

Native American Sites. Two prehistoric Native American archaeological sites, the Falls Campground Site (CA-LAn-983) and the newly detected Bouquet Cache Site (F.S. No. 05-01-53-00227), are located within the Bouquet Fire BAER APE.

- (1) *Falls Campground Site (CA-LAn-983).* This Class II prehistoric bedrock mortar site is situated on a creek terrace on the east side of Bouquet Creek.
- (2) *The Bouquet Cache site (F.S. No. 05-01-53-00227).* This newly detected site, comprised of at least three stone features, a cairn and two storage caches, is located along a hand-cut fire line on the west slope of Bouquet Canyon.

Historic Sites. Several historic period resources are identified within the Bouquet Fire burned area. These are identified as follows:

- (1) *Bouquet Canyon Recreation Residence Tract and Big Oaks Lodge* (FS No. 05-01-53-00161). This historic summer home tract of 110 existing buildings and the Big Oak Lodge represents a significant period in the development of second homes in the ANF. Many of the cabins epitomize rustic architectural designs of the early twentieth century. A total of 45 buildings are considered as contributors to a potential NRHP District. These are identified as Buildings Nos. 2, 5, 6, 8, 11, 12, 22, 23, 24, 28, 29, 35, 38, 39, 40, 43, 44, 46, 48, 55, 58, 59, 68, 69, 70, 73, 77, 78, 80, 87, 92, 98, 101, 103A, 105, 107, 108, 113, 115, 117, 118, 119, 124, 126, 127, and 133. At this time, the tract as a whole does not appear eligible to the NRHP; however, required concurrences with this determination has not obtained, and, therefore, each structure and the tract in its entirety must be treated as if it were eligible to the NRHP.
- (2) *Bouquet Adits* (FS No. 05-01-53-00225). A newly detected historic mining or quarry site, the Bouquet Adits is a Class II historic site situated mid-slope on the eastern wall of Bouquet Canyon. The site is comprised of two mining or quarrying locations and associated segments of an abandoned haul road.

(3) *Quarry Road (FS No. 05-01-53-00226)*, This Heritage Resource Class II historic linear site is comprised of Forest Road No. 6N19 situated on the western slopes of Bouquet Canyon.

(4) *Bouquet - Sierra Pelona-Texas Complex (FS No. 05-01- 53-00284)*. This Heritage Resource Class II linear site is a dirt road system that crosses Sierra Pelona Ridge from Bouquet Canyon into Texas Canon. The resource includes Forest Road No. 6N07, segments of which are known as the “Incinerator” Road and Sierra Pelona Road, and Forest Road No. 5N18, known as the Falls Canyon Road.

Heritage Sites Determined Outside the APE. A number of additional heritage resource sites are situated near the Bouquet Fire burned area but are determined as located outside the BAER APE. These sites include:

- * *Texas Canyon Station (CA-LAn-426/H)*
- * *Buddy’s Bench (CA-LAn-1373)*
- * *Mystic Earth Oven – Rick’s “Tunnul” (CA-LAn-1258)*
- * *CA-LAn-1462*

Sensitive Areas for Significant/Critical Heritage Resource Sites in Risk Zones Various stream terraces along Bouquet are sensitive for the presence of prehistoric deposits. The walls of Bouquet Canyon are sensitive for the the presence of historic quarry sites.

EMERGENCY POINTS OF DAMAGE

This section provides summary of determinations of potential effects to heritage resources within the Bouquet Fire APE:

(1) *Falls Campground Site (CA-LAn-983)*. The terrace landform containing this bedrock mortar was not burned by the fire; however, the fire did burn slopes on the west side of Bouquet Creek. Since the creek is controlled by Bouquet Reservoir, the potential for subsequent winter debris flows at this specific location is extremely unlikely.

(2) *Bouquet Cache Site (F.S. No. 05-01-53-00227)*. The fire burned over part of the site but the handline protected at least one stone feature from effects of burning. Burning of vegetation was not intense at this location and the site is situated on a relatively stable landform. Further effects from watershed damage are highly unlikely.

(3) *Bouquet Adits (FS No. 05-01-53-00225)*. The burning of vegetation at this location appears to have been relatively intense. Erosion and debris flows are

expected; however, these are not expected to change site condition to an unacceptable degree. In any case, the steep, relatively inaccessible slopes preclude effective and practicable rehabilitation treatments at this site.

(4) *Bouquet - Sierra Pelona-Texas Road Complex (FS No. 05-01- 53-00284)*. The Incinerator Road has potential for damage from excessive runoffs in channels that cross the road at three locations.

(5) *Quarry Road (FS No. 05-01-53-00226)*. This road has check dams in place that are expected to control excess drainage related to the fire. Potential for significant damage related to the Bouquet Fire is extremely minimal.

(6) *Bouquet Canyon Recreation Residence Tract and Big Oaks Lodge (FS No. 05-01-53-00161)*. At least 15 of the private recreation residence cabins are subject to slope run-off and debris flows. Additionally, threats to the associated Big Oaks Lodge include damage from debris and water flowing down a small drainage.

PROPOSED BAER PRESCRIPTIONS

Heritage Resource Prescriptions

(1) *Falls Campground Site (CA-LAn-983)*. No BAER treatments are proposed.

(2) *Bouquet Cache Site (F.S. No. 05-01-53-00227)*. No BAER treatments are likely to be effective and no BAER treatments are proposed.

(3) *Bouquet Adits (FS No. 05-01-53-00225)*. There are no effective rehabilitation treatments that are practicable at this location. No BAER treatments are proposed.

(4) *Bouquet - Sierra Pelona-Texas Road Complex (FS No. 05-01- 53-00284)*. See following section of this report.

(5) *Quarry Road (FS No. 05-01-53-00226)*. See following section of this report.

(6) *Bouquet Canyon Tract and Big Oaks Lodge (FS No. 05-01-53-00161)*. See following section of this report.

Non-Heritage BAER Prescriptions

In addition to heritage-driven treatments, a number of non-Heritage BAER treatments are proposed. Treatments expected to involve heritage resource analysis and regulatory compliance coordination include the following:

(1) *Bouquet - Sierra Pelona-Texas Road Complex (FS No. 05-01- 53-00284)*. ANF Engineering has proposed the placement of three debris barriers to be placed at three channel crossings along Road No. 6N07 to protect the road from washout.

Estimated one day of Heritage Resource personnel costs to support analysis for road-related BAER prescriptions are as follows:

Heritage Personnel:	\$ 227.00
Supplies:	\$ 0.00
Mileage:	<u>\$ 30.00</u>
Heritage Costs:	\$ 257.00

(3) *Bouquet Canyon Tract and Big Oaks Lodge (FS No. 05-01-53-00161)*. BAER treatments have been proposed at 15 private tract buildings that may be subject to slope run-off and debris flows. These treatments involve placement of haybales and hog wire fencing to divert run-off and clean-out of culverts. It is proposed to place a trash rack behind the Big Oaks Lodge to hold back larger debris flowing down the drainage. Estimated costs for two days of Heritage Resource personnel support for this treatment are as follows:

Heritage Personnel:	\$ 454.00
Supplies:	\$ 10.00
Mileage:	<u>\$ 60.00</u>
Heritage Costs:	\$ 524.00

(5) *Non-Native Plants*. Non-native plants may proliferate as a result of the fire. It is proposed to grub out patches of noxious weeds in the riparian zone and at the presently operating quarry and at abandoned quarries. Cost for three days of Heritage Resource personnel support for this treatment are as follows:

Heritage Personnel:	\$ 681.00
Supplies:	\$ 10.00
Mileage:	<u>\$ 90.00</u>
Heritage Costs:	\$ 781.00

(6) *Los Cantiles Picnic Ground*. A trash rack is proposed at the ANF Los Cantiles Picnic Ground to protect bridges, water systems, parking lot, flush toilets and other developments at the facility. Cost for one day of Heritage Resource support for this treatment are as follows:

Heritage Personnel:	\$ 227.00
Supplies:	\$ 0.00
Mileage:	<u>\$ 30.00</u>
Heritage Costs:	\$ 257.00

TOTAL ESTIMATED HERITAGE COSTS FOR BOUQUET BAER: \$1,819.00

PRELIMINARY REPORT
2002 COPPER FIRE BURNED AREA EMERGENCY REHABILITATION (BAER)
TREATMENTS OF HERITAGE RESOURCES,
SANTA CLARA – MOJAVE RIVERS RANGER DISTRICT,
ANGELES NATIONAL FOREST, CALIFORNIA

Prepared by
Darrell W. Vance, Archaeologist

DESCRIPTION OF EMERGENCY

The Copper Fire. During June 5-11, 2002, a wildfire emergency that became known as the Copper Fire Incident burned approximately 23,407 acres of predominately chaparral vegetation, burned nine residences, and destroyed seventeen outbuildings located within administrative boundaries of the Santa Clara - Mojave Rivers Ranger District, Angeles National Forest (ANF), Los Angeles County, California. The fire began from a welder's spark in a housing development, and burned north onto the Forest. This report provides analysis of Copper Fire watershed damage effects to heritage resources and describes heritage resource compliance related to proposed BAER measures.

Potential Effects to Heritage Resources. Research has shown that wildfire incidents have potential to damage or destroy heritage resource properties through (1) direct effects of the fire, including burning and smoke damage; (2) ground disturbing fire suppression and/or rehabilitation measures; (3) erosive soil movement caused by subsequent storm precipitation; (4) increased artifact looting; and (5) unauthorized use of Off-Highway Vehicles (OHVs). These wildfire-related processes may alter the context of archaeological remains vital to any scientific analysis and interpretation and, in the worst cases, have the potential to completely destroy irreplaceable heritage resources. It is clear that direct and indirect effects that wildfires have potential to directly or indirectly affect heritage resources located within the Area of Potential Effect (APE).

Primary concerns about specific effects of the Copper Fire in terms of significant heritage resources are centered on ground disturbance/soil movement that could change context of remains vital to any scientific analysis/interpretation value or that could bury the remains and prohibit site discovery. The burning of vegetation may also increase visibility of site locations and make them more susceptible to vandalism or open them up to Off-Highway Vehicle (OHV) travel.

Regulation and Authority. Forest Service authority, policy, and direction authorizes the use of BAER funding for protection of archaeological and historic resources from wildfire-caused watershed damage and, also, protection of these resources from various BAER watershed treatments. In addition to development of protection measures for known heritage resources, archaeological survey/inventory in support of the BAER analysis, including inspection of proposed rehabilitation treatment areas, is also authorized. While BAER treatments are exempted from National Environmental Protection Act (NEPA) analysis, they are not exempt from the processual mandates

of Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470 [NHPA]).

HERITAGE RESOURCE OBJECTIVES

Specific heritage resource objectives of this report are:

(1) Identify all known heritage resource sites impacted by burning of the Copper Fire on the Angeles National Forest; and

(2) Prohibit future damage to Class I and Class II Heritage Resource Sites due to fire-related soil erosion, debris flows, increased site accessibility/visibility to artifact looting/OHV travel, or from implementation of rehabilitation treatments. Class I Heritage Resources are historic and prehistoric resources determined eligible for inclusion to the National Register of Historic Places [NRHP] per criteria in 36 Code of Federal Regulations (CFR) 60.4. Class II sites, all heritage resources that have not been evaluated as to significance, are afforded the same consideration and protection as Class I sites until evaluation takes place (Forest Service Manual [FSM] 2361).

BACKGROUND DATA

Initial Identification Methods. In conformance with standards established for BAER-related heritage resource investigations in southern California, the Copper Fire Area of Potential Effect (APE) is identified as encompassing all areas of burned vegetation, unburned areas with potential for fire-related soil erosion and debris flows, and locations proposed for ground-disturbing BAER treatments. Heritage resource site identification and potential watershed damage assessment within the Copper Fire APE involved the following methods:

(1) Background search of archaeological site records and inventory reports contained within ANF Heritage Resource files and Geographic Information Systems (GIS);

(2) Field archaeological reconnaissance at the locations of all previously identified heritage resource sites within the APE; and

(3) Field inspections of all proposed ground-disturbing BAER treatment locations not been previously subjected to archaeological survey.

Personnel. Mike McIntyre, Forest Heritage Resource Program Manager / BAER Team Leader provided oversight and guidance to the heritage resource analysis. Douglas Milburn, ANF Archaeologist, served as Incident Archaeologist for the Copper Fire. Darrell Vance, ANF Archaeologist conducted background research and wrote this report. Both Milburn and Vance carried out Field inspections.

Heritage Resources. This section identifies the heritage resources identified within the Copper Fire APE as result background data analysis.

Native American Sites. Several prehistoric period resources are identified within the Copper Fire burned area. These are identified as follows:

- 1) *Powerhouse #1 Site* (CA-LAn-427). This Class II prehistoric site consists of midden and human burials. It is situated very near the DWP Powerhouse #1, in San Francisquito Canyon.
- 2) *Phillips Ranch* (CA-LAn-980). This Class II site consists of a scatter of groundstone artifacts, located near the junction of Bee and San Francisquito Canyons.
- 3) *Bee Canyon* (CA-LAn-981). This Class II site consists of a scatter of groundstone artifacts, located in Bee Canyon, near the L. A. Aqueduct siphon.
- 4) *Dry Gulch Rockshelter* (CA-LAn-1245). This Class II prehistoric rockshelter is located in the Dry Gulch drainage, north of San Francisquito Canyon.
- 5) *American Adventure 800 BRM* (CA-LAn-1688). This Class II prehistoric bedrock mortar is located on the north side of San Francisquito Canyon, near a private shooting range.
- 6) *Rock Peak Cairn* (CA-LAn-3015). This Class II prehistoric cache site is located on Rock Peak, east of Dry Canyon.
- 7) *Drinkwater Canyon Petroglyphs* (FS# 05-01-53-221). This Class II prehistoric site consists of a series of apparent petroglyphs on several panels in a high bowl at the head of Drinkwater Canyon.
- 8) *San Francisquito Site #1* (FS# 05-01-53-73). This prehistoric cache site no longer exists, having been tested and destroyed in road construction of the San Francisquito Road Bypass.

Historic Sites. Several historic period resources are identified within the Copper Fire burned area. These are identified as follows:

- 1) *St. Francis Dam* (CA-LAn-1259). This Class I historic site is a California State Historic Site, consisting of the remains of the St. Francis Dam. It is located in the San Francisquito Canyon drainage.
- 2) *Drinkwater Prospect* (CA-LAn-1384). This Class II historic mining site is located in the Dry Canyon Drainage, near the City Highline Road (6N21).
- 3) *San Francisquito Historic Site* (CA-LAn-1454). This Class II historic site is a former Forest Day-Use area, located near the Drinkwater 4x4 Trail.

- 4) *Chinaman Flat* (CA-LAn-1455). This Class II historic site is a former mining store and burial, located southeast of Drinkwater Flat in the Dry Canyon drainage.
- 5) *Olive-Power Plant I Transmission Line* (CA-LAn-2132). This Class II historic transmission line runs from Powerhouse #1 to the city of Los Angeles.
- 6) *Hazel Del Mining Camp* (CA-LAn-2746). This Class II historic mining site is located on a stream terrace west of Jupiter Mountain.
- 7) *Bee Canyon School* (FS# 05-01-53-109). This Class II historic site is the remains of an old school house, located on the east side of the San Francisquito drainage.
- 8) *San Francisquito Recreation Residence Tract* (FS# 05-01-53-163). This historic summer home tract of 2 existing buildings demonstrate rustic architectural designs of the early twentieth century. At this time the tract does not appear eligible to the NRHP; however, required concurrences with this determination have not been obtained.
- 9) *Discovery Route* (FS# 05-01-53-195). This Heritage Resource Class II historic linear site in San Francisquito Canyon is a DWP road that is associated, in part, with the historic Butterfield Stagecoach route of the 19th century.
- 10) *Drinkwater Canyon Mines* (FS# 05-01-53-220). This Class II historic mining site is composed of a series of mining excavations at the head of Drinkwater Canyon.
- 11) *Drinkwater Flat Mining Site* (FS# 05-01-53-222). This Class II historic mining site is composed of a series of excavations within the area known as Drinkwater Flat.
- 12) *Del Sur Road* (FS# 05-01-53-226). This Heritage Resource Class II historic linear route is comprised of Forest Road 6N19, situated on the western slopes of Bouquet Canyon.
- 13) *San Francisquito Aqueduct Complex* (FS# 05-01-53-228). This newly detected site, comprised of a length of historic road, excavation adits, and aqueduct-related historic debris, is situated on the southern slopes of San Francisquito Canyon.
- 14) *Spunky Canyon Road* (FS# 05-01-53-274). This Class II historic route is composed of Forest Road 6N09, situated north of Bouquet Reservoir.
- 15) *Saugus Del Sur Road* (FS# 05-01-53-275). This Heritage Resource Class II Historic Route is composed of Forest Road 6N18 along Del Sur Ridge.

Multi-Element Sites. Heritage resource sites that contain both prehistoric and historic Elements have also been identified within the Copper Fire burned area. These are identified as follows:

- 1) *St. Francis Reservoir Apiary Site* (FS# 05-01-53-223). This Class II heritage site is composed of historic debris associated with an apiary and prehistoric groundstone. It is located on a creek terrace in the San Francisquito drainage.
- 2) *Drinkwater Flat* (CA-LAn-1217). This Class II heritage site is composed of a prehistoric habitation site and historic spike camp, located on a creek in Drinkwater Flat.

Heritage Sites Determined Outside the APE. A number of additional heritage resource sites are situated near the Copper Fire burned area but are determined as located outside the BAER APE. These sites include:

- *Saugus #3* (CA-LAn-429).
- *Green Valley #2* (CA-LAn-487).
- *Green Valley #3* (CA-LAn-984).
- *California Graphite Company* (CA-LAn-2598).
- *San Francisquito Adit* (CA-LAn-2599).
- *Drinkwater Prairie Mining Site* (FS# 05-01-53-217).
- *Drinkwater Prairie Storage Site* (FS# 05-01-53-219).

Sensitive Areas for Significant/Critical Heritage Resource Sites in Risk Zones. Various stream terraces along San Francisquito (above the historic St. Francis Dam), Bee Canyon, Dowd Canyon, and the intervening drainages are sensitive for the presence of prehistoric deposits. The walls of San Francisquito Canyon and its radial drainages are sensitive for the presence of historic mining sites. The Drinkwater Flat Area is particularly sensitive for both historic and prehistoric heritage resources.

EMERGENCY POINTS OF DAMAGE

This section provides summary of determinations of potential effects to heritage resources within the Copper Fire APE:

- 1) *Powerhouse #1 Site* (CA-LAn-427). The site itself was not burned over, but lies in a green island located around the Powerhouse. It is situated in a canyon, surrounded by the burn, but effects from debris flow are unlikely.

- 2) *Phillips Ranch* (CA-LAn-980). The site lies on private land in the burn area. Residences and outbuildings that likely overlie the deposits were destroyed in the fire. Damage may occur to the site if debris removal or construction projects are undertaken.
- 3) *Bee Canyon* (CA-LAn-981). The site lies in a drainage that was burned over. The deposits have been disturbed several times in the past. Artifacts were located on site inspection, but effects from watershed activity are not expected to further alter the site.
- 4) *Drinkwater Flat* (CA-LAn-1217). A portion of the site burned over, but the riparian zone within site boundaries appears relatively intact, with a large green island upstream. The area vegetation should prevent effects from erosion and debris flow.
- 5) *Dry Gulch Rockshelter* (CA-LAn-1245). The rockshelter was not burned in the fire, although landforms surrounding it were. No damage is expected from erosion or slope movement.
- 6) *St. Francis Dam* (CA-LAn-1259). The site lies in the burn area, at the bottom of San Francisquito Canyon, where it may experience debris flow. However, the features are concrete, and have survived a near-cataclysmic flooding event in the past. No further damage is expected.
- 7) *Drinkwater Prospect* (CA-LAn-1384). The site was burned over, and lies in a drainage bottom. The area may be only marginally affected by erosion and debris flow.
- 8) *San Francisquito Historic Site* (CA-LAn-1454). The site was burned over, and lies next to the road in the bottom of San Francisquito Canyon. The features have potential for silting and becoming buried from erosion and downstream debris flow. That does not necessitate treatment. However, the larger concern is from roadwork derived from upslope/ upstream erosion.
- 9) *Chinaman Flat* (CA-LAn-1455). The site was not burned in the fire, but dozer activity took place nearby. There is no present concern from soil movement or erosion.
- 10) *American Adventure 800 BRM* (CA-LAn-1688). The Bedrock Mortar boulder has been displaced from its original location and now lies on a terrace above the creek. Although it does not sit in the burn, erosion and slope movement from upstream may affect the site.
- 11) *Olive-Power Plant I Transmission Line* (CA-LAn-2132). The towers and lines of this resource sit both in and out of the burn area. It is an active resource,

maintained by the Department of Water and Power. It is rather securely footed, and should not experience any effects.

- 12) *Hazel Del Mining Camp* (CA-LAn-2746). This site was adversely affected by the Copper Fire. One largely wooden structure burned to the ground, and three others that had previously collapsed lost wooden elements in the incident. Three adits also had wooden supports that were damaged, causing one to collapse and fill with earth, and another to partially collapse. The uphill portions of slope appear to be relatively anchored by skeletal vegetation. The site sits on a terrace, and may lose some artifacts to debris flow, but should only be minimally affected.
- 13) *Rock Peak Cairn* (CA-LAn-3015). This site was burned over, but sits on a peak that should not experience slope movement.
- 14) *Drinkwater Canyon Petroglyphs* (FS# 05-01-53-221). The site burned over, forming a patina on the rock surfaces. The nature of the petroglyphs is still in debate, however, and further damage is not expected.
- 15) *San Francisquito Site #1* (FS# 05-01-53-73). This site no longer exists, having been excavated in advance of its removal in road construction.
- 16) *Bee Canyon School* (FS# 05-01-53-109). This site was not burned over by the fire, but is located within the perimeter. Do erosion-related damage is expected to impact it.
- 17) *San Francisquito Recreation Residence Tract* (FS# 05-01-53-163). This site burned partially over. One of the structures was lost. Its wooden elements were completely burned, but its stone foundation and rockwork are extant. The other structure backs onto a steep slope, and some retention measures appear to have been emplaced. Nevertheless, erosion and soil movement contributing to its damage are a real possibility.
- 18) *Discovery Route* (FS# 05-01-53-195). This linear route was burned over, but has been graded since the incident. Erosion is likely from the slopes above.
- 19) *Drinkwater Canyon Mines* (FS# 05-01-53-220). This site was burned over. It sits in a relatively flat area, and should not be affected by soil movement.
- 20) *Drinkwater Flat Mining Site* (FS# 05-01-53-222). This site was burned over. It sits in a relatively flat area, and should not be affected by soil movement.
- 21) *St. Francis Reservoir Apiary Site* (FS# 05-01-53-223). This site was burned over, and abuts onto a slope. It stands to be damaged from slope movement.

- 22) *Del Sur Road* (FS# 05-01-53-226). This road has check dams in place that are expected to control excess drainage related to the fire. Potential for significant damage is extremely minimal.
- 23) *San Francisquito Aqueduct Complex* (FS# 05-01-53-228). This newly detected site was burned over, and sits on a steep slope with a high potential for soil movement. Prior to any treatment proposal, the site needs to be fully documented.
- 24) *Spunky Canyon Road* (FS# 05-01-53-274). This road has check dams in place that are expected to control excess drainage related to the fire. Potential for significant damage related to the Copper Fire is extremely minimal.
- 25) *Saugus Del Sur Road* (FS# 05-01-53-275). This road has check dams in place that are expected to control excess drainage related to the fire. Potential for significant damage is extremely minimal.

PROPOSED BAER PRESCRIPTIONS

Heritage Resource Prescriptions

- 1) *Powerhouse #1 Site* (CA-LAn-427). No BAER treatments are proposed.
- 2) *Phillips Ranch* (CA-LAn-980). The site lies on private land in the burn area. If any BAER treatments are to be undertaken in this area, work should be monitored for heritage resources.
- 3) *Bee Canyon* (CA-LAn-981). No BAER treatments are proposed.
- 4) *Drinkwater Flat* (CA-LAn-1217). No BAER treatments are proposed.
- 5) *Dry Gulch Rockshelter* (CA-LAn-1245). No BAER treatments are proposed.
- 6) *St. Francis Dam* (CA-LAn-1259). No treatment is necessary for site protection.
- 7) *Drinkwater Prospect* (CA-LAn-1384). The steep, relatively inaccessible slopes make practical rehabilitation of the site prohibitive. No BAER treatments are proposed.
- 8) *San Francisquito Historic Site* (CA-LAn-1454). Concern is from roadwork; if earth movement is to be undertaken along San Francisquito Road between the Drinkwater 4x4 road and the Fire Station, heritage monitoring is suggested.
- 9) *Chinaman Flat* (CA-LAn-1455). No BAER treatments are proposed.
- 10) *American Adventure 800 BRM* (CA-LAn-1688). No BAER treatments are proposed.

- 11) *Olive-Power Plant I Transmission Line* (CA-LAn-2132). It is an active resource, maintained by the Department of Water and Power. If maintenance is required, that should be the decision of that agency.
- 12) *Hazel Del Mining Camp* (CA-LAn-2746). The fire damaged the site, but little further effects are expected. The only real concern is access – there is an ongoing possibility of trespass into the adits at the site. For health and safety reasons, small barriers should be erected to prevent access.

Personnel:	\$500.00
Supplies:	\$100.00
(100 ft. of fencing, posts, signs)	
<u>Mileage:</u>	<u>\$50.00</u>
Costs:	\$650.00

- 13) *Rock Peak Cairn* (CA-LAn-3015). No BAER treatments are proposed.
- 14) *Drinkwater Canyon Petroglyphs* (FS# 05-01-53-221). No BAER treatments are proposed.
- 15) *San Francisquito Site #1* (FS# 05-01-53-73). No BAER treatments are proposed.
- 16) *Bee Canyon School* (FS# 05-01-53-109). No BAER treatments are proposed.
- 17) *San Francisquito Recreation Residence Tract* (FS# 05-01-53-163). A structure backs onto a steep slope, with potential erosion and soil movement a possibility. The site should be examined by a soils expert to determine if treatments are necessary.
- 18) *Discovery Route* (FS# 05-01-53-195). This linear route is routinely maintained by DWP. No BAER treatments are proposed.
- 19) *Drinkwater Canyon Mines* (FS# 05-01-53-220). No BAER treatments are proposed.
- 20) *Drinkwater Flat Mining Site* (FS# 05-01-53-222). No BAER treatments are proposed.
- 21) *St. Francis Reservoir Apiary Site* (FS# 05-01-53-223). This site stands to be damaged from slope movement. It is proposed that a length of silt fencing be placed above the site to prevent erosion that may bury artifacts. Estimated one day of Heritage Resource personnel costs for this treatment are as follows:

Heritage Personnel: \$296.00

Supplies: \$20.00
(100 ft. of silt fencing)

Mileage: \$49.00

Heritage Costs: \$365.00

- 22) *Del Sur Road* (FS# 05-01-53-226). No BAER treatments are proposed.

23) *San Francisquito Aqueduct Complex* (FS# 05-01-53-228). Prior to any treatment proposal, the site needs to be fully documented. It is recommended that Heritage Resources contract out to record the site.

Contract Price: \$ 3000.00

24) *Spunky Canyon Road* (FS# 05-01-53-274). No BAER treatments are proposed.

25) *Saugus Del Sur Road* (FS# 05-01-53-275). No BAER treatments are proposed.

GUN II FIRE HERITAGE RESOURCE ASSESSMENT

The lands administered by the Almanor Ranger District of Lassen National Forest, include a region known as the “front country”, which was the location of significant historical events that helped shape the western cultural landscape. Lands burned over by the Gun II Fire include the mid to lower reaches of Mill and Antelope Creeks. Recorded archaeological sites located within the fire boundaries include 82 prehistoric sites, 15 historic sites, and 8 sites, which have both historic and prehistoric Elements (Refer to Figure 1). Very few surveys have been conducted in this area and the sites thus far recorded reflect a small percentage of the overall number. Archaeological sites document at least 4000 years of human occupation in the region, including the era of violent contact between Euro-American settlers and the Yana Indians. The Yana were the larger grouping which included the Yahí, the tribe associated with Ishi, the last known wild Indian in California.

Archaeology of the Southern Cascade Foothill Region

Prehistory: The areas within the fire were home to both the Yahí and Southern branches of the Yana Indians. The Ishi Wilderness named after the “last wild Indian” Ishi is the traditional territory of the Yahí Yana culture. The Yahí inhabited lands within the watersheds of Mill and Deer Creeks encompassed by the Ishi Wilderness. Antelope Creek located slightly northwest of the wilderness was the traditional homeland of the Southern Yana group. Permanent villages cover virtually every river terrace and large rock shelter in the region below 3,000 feet in elevation. The only known dance house in Yahí territory is within the fire area on Mill Creek. Prehistoric remains include house pits, rock rings, pitted boulder petroglyphs, lithic scatters, a basalt quarry and numerous other special use sites. It is within this area that the Yana subsisted off the land during the fall, winter and the spring. Even in summer months when temperatures rose and most plants were no longer available. The Yana probably never fully abandoned the region, even in summer months when temperatures rose and most plants were no longer available.

The Yana lived as hunter-gatherers subsisting on acorns, deer, fish and a variety of other small mammals and plants. The front country ecotone supports species found in both oak/woodland-grassland and mixed conifer forest zones. Biodiversity of this region, including the anadromous fisheries in Deer, Mill and Antelope Creeks and large migratory deer herds, provided a plentiful resource base for the Yana. The region also provided limited access due to the extreme ruggedness of the Mill and Deer Creeks canyons. Limited access to this area allowed Ishi and his tribe to live in the wild after historic contact. The ability of Ishi's group to live isolated for 40 years is a testament to the remote nature of the region as well as the Yana's determination to survive.

History: This region also includes traces of early ranching, mining, and occupation. The Lassen Trail, on the southern flank of the fire, was a major travel route to the valley and gold fields between 1848-1850. Numerous historic homesteads exist within the region as well as other historic sites associated with the Lassen Trail. Places associated with significant historical events are also found within the Gun II fire including Kingsley Cave, the site of the last known

massacre of Yana Indians. The Savercool Place, Summerville Mill and the Kitchen's Place are also located within the fire boundaries on upper Mill Creek.

In short, this portion of the Southern Cascade foothills provides significant data with respect to the contact of two cultures, Native Americans and Euro-Americans. After historic contact, Yana culture became diluted as they adopted Euro-American elements. The Yana began consuming domestic livestock and processed foods, using bottle glass for arrow points, and metal pieces for knives, buckets, etc. Many of the historic implements were obtained from discarded debris along the Lassen Trail. The depleted deer herds and restricted land base caused by Euro-American settlement forced the Yana to live in non-traditional ways.

Although, this area is rich in heritage resources very little research has taken place to supplement our understanding of the Yana culture and earlier populations inhabiting the area. Heritage sites in this area contain a wealth of information to answer research questions, but they must be protected from natural as well as culturally induced damage. Archaeological resources in the Mill Creek area are in the process of being nominated to the National Register of Historic Places as an historic district.

Fire Suppression

Archaeologists were brought in as resource advisors during the initial suppression phase of the Gun II fire to prevent heritage resource damage by fire suppression activities. The strategy to protect heritage resources began by flagging existing archaeological sites as non-entry zones along proposed dozer lines, hand lines and roads to be used as fire control lines, when these locations were known. The location of heritage protection areas was provided to the appropriate Division Supervisors at daily briefings and placed in the Incident Action Plan to ensure the protection of these resources. Archaeologists worked with Division Supervisors to protect known sites. The majority of fire suppression damage to archaeological sites occurs as firebreaks are quickly established by mechanized equipment (bulldozers) on relatively flat ground or by crews "cutting hand line" on steep inaccessible land (in an attempt to stop the fire from spreading); and by the creation of staging areas, helispots and safety areas. In order to assess fire suppression damage to heritage resources the following strategy was adopted:

- Review archaeological site location atlas and survey coverage maps.
- Identify heritage resources disturbed by fire suppression activities. Survey all dozer lines, hand lines, safety areas, helispots and staging areas that have not been previously examined or areas requiring surveys to be redone to higher standards.
- Record archaeological sites encountered during survey of suppression activity areas and rerecord existing sites as needed; GPS the boundaries of all sites.
- Protect archaeological sites from suppression rehabilitation treatments.
- Assess damage caused to archaeological sites by suppression efforts.

- Evaluate damaged sites for National Register eligibility in consultation with the State Historic Preservation Office (SHPO). If a site is determined to be eligible for listing, adverse effects to the site will require mitigation in consultation with the SHPO.

Findings

No previously recorded archaeological sites were damaged by suppression activities. However, one site was located after placement of a fire control line. This site will be evaluated for National Register eligibility.

Burned Area Rehabilitation

A “Burned Area Emergency Team” (BAER) was formed and began work during the first week of October. The priority for heritage resources was to identify the effects of the fire on archaeological sites, propose treatments to stabilize sites or mitigate potential effects, and protect archaeological sites from proposed post-fire rehabilitation treatments.

The lands within the Ishi Wilderness and the surrounding front country are traditionally affected by wildfire every few years. Archaeologists focused their site condition surveys to assess fire damage to those areas affected by moderate to high intensity burns where it would be expected that the effects from the Gun II fire would be the greatest. These areas included Long Point, Round Mountain Creek, Mill Creek and Rancheria Creek. A sample of known archaeological sites in these areas was visited to assess any direct or potential impacts from this fire.

A total of ten sites were visited in the areas noted above. Although, most of the sites were burned over, the fire destroyed only one site, an historic wagon associated with the Lassen trail located on a ridge above Mill Creek. Few sites in these areas have cultural material remaining that would burn in a fire (i.e., wooden structures or objects). The historic Savercool Place (05-06-51-31) and site 05-06-51-148, a multiElement site (historic foundations and a prehistoric midden), located on the north side of Mill Creek; site 05-06-51-597 near Round Mountain Creek; and Long Point sites 05-06-51-724 & 725, burned extremely hot. The remaining sites sampled along Mill Creek and Rancheria Creek area exhibited a moderate burn.

Heritage Resource Concerns

Although, the fire had few direct effects on archaeological sites there remains the potential for indirect effects from loss of water control resulting in damage to archaeological sites (loss of property). Ponderosa Way along the north and south sides of Mill Creek extending to each rim has the potential for loss of water control. Twenty-five problematic areas along this stretch of roadway have been identified as probable areas water may flow outside of established channels (See Road Maintenance Report). Potentially, seventeen archaeological sites along Mill Creek

may be adversely affected by lack of water control. From a Heritage Resource standpoint, it is imperative that water coming off the Ponderosa Way stays in the established drainage channels.

The Gun II fire has increased visibility of archaeological sites due to the loss of surface vegetation. The removal of grasses, berries and brush by this fire has totally exposed the surface of many sites in the Mill Creek watershed making obvious the location of archaeological features such as midden mounds, housepits, historic foundations, historic dumps, and artifact concentrations. Artifact collecting and site looting has been a continual problem in front country sites. People are drawn to this area by the story of Ishi and use is increasing yearly. Prehistoric as well as historic sites are non-renewal resources with values that are adversely affected by collectors and looters. Archaeological sites are usually afforded protection from surface collecting and looting by a thick vegetation cover of grasses, black berries, poison oak and brush. However, until vegetation is reestablished, sites in the Mill Creek watershed will be fully exposed to artifact collectors.

The final concern is the protection of archaeological resources from proposed BAER treatments. Thus far the majority of treatments proposed will rectify road problems in the burn area (out sloping roads, water bars) and prevent the loss of control of water off Ponderosa Way (diversion prevention dips). Other proposed treatments will stabilize hillsides and include contour falling of trees, crushing brush and contour mulching. Although, these activities are viewed as beneficial to heritage resources in many instances, the proposed treatments must be evaluated for their effects to heritage resources.

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to consider the effect of undertakings on Heritage Resources. Treatments proposed by BAER are considered undertakings. Section 110 of NHPA also compels Federal agencies to protect Heritage Resources from degradation caused by natural forces as well as illegal activities.

Recommended Heritage Resource Treatments

Below are proposed treatments to mitigate potential effects of the Gun II fire on Heritage resources.

1. Assess the effects of the fire on all known sites along the north and south sides of Mill Creek and Round Mountain Creek area.

It is not feasible to visit all of the one hundred and five archaeological sites located within the Gun II fire, due to their remote locations, inaccessibility and low fire intensities. The assessment of fire effects to archaeological sites will focus only in areas exhibiting high to moderate burns, areas of high archaeological sensitivity and use by the public. Areas fitting these criteria are Round Mnt Creek and along the Mill Creek trail. Approximately, sixty-seven archaeological sites are located in these areas. The remaining thirty-eight sites within the fire boundary, due to their low probability to be adversely affected, will not be addressed.

2. Gather and document archaeological information on exposed sites (rerecord, map and collect diagnostic artifacts) to minimize loss of heritage values by collectors and looters.

Archaeological sites exposed by the loss of surface vegetation are now in danger of losing valuable information from artifact collectors and looters. Approximately 10% of the burned over sites will require updating site records, recording newly exposed features, mapping and collecting diagnostic artifacts. This will mitigate the potential loss of information from looting and surface collecting.

3. Stabilize the historic Savercool Place by diverting runoff away from historic features and record newly exposed features.

The fire burned extremely hot through the historic Savercool site, removing all surface vegetation and exposing artifact concentrations and site features including foundations. The potential for surface collecting and looting at this site is extremely high. Recording site features, mapping and collecting diagnostic artifacts will minimize the loss of information from illegal activities. The lack of surface vegetation will also cause increased erosion which will damage site integrity. Water needs to be diverted back to the side channel located on west side of the site to prevent degradation to the house foundation and associated archaeological deposit.

4. Maintain control of water in established channels along Ponderosa Way on the north side of Mill Creek utilizing K rails at crossings and diversion prevention dips along the south side.

Refer to road maintenance report for specific treatment areas. This will keep water from creating new channels causing damage to numerous sites along Mill Creek.

5. Identify and protect heritage resources within all proposed BAER treatment areas.

Conduct archaeological surveys in areas of proposed road and hillside treatments. Modify or exclude treatments that affect heritage resources.

6. Protect burned over sites from surface collectors and looters by regularly monitoring sites along the Mill Creek trail.

The most frequently used trails within the Gun II burn are located on the north and south sides of Mill Creek. Patrolling this area for illegal activity and monitoring sites on a monthly basis will minimize or prevent damage to Heritage sites. Patrolling/site monitoring should continue until vegetation is established, approximately eight months.

7. Sign all trailheads within and accessing the Gun II fire APE with ARPA signs.

Place “archaeological protection signs” (ARPA) at Mill Creek trailheads, Black Rock Campground, Rancheria Creek trailhead and Peligreen OHV trailhead. These signs will inform the public that it is illegal to disturb archaeological resources.

Risk Assessment

If the treatments listed above are not implemented, a potential loss of approximately \$140,000.00 in heritage resource values can be expected. This figure was calculated based on the assumption that seven sites will be damaged and require a damage assessment and evaluation for National Register eligibility. The minimum cost for evaluating complex sites is \$20,000.00 per site.

**HERITAGE RESOURCES
REPORT ON PROCESS, FINDINGS AND RECOMMENDATIONS
KIRK INCIDENT BAER
MONTEREY RANGER DISTRICT
LOS PADRES NATIONAL FOREST**

Report Prepared by

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October 29, 1999

Introduction

The Kirk Fire Complex includes the Tassajara, Mountain and Hare Fires in the Ventana Wilderness. These fires started as a result of a lightning storm that moved through the area on September 8, 1999. These fires and several others burned together and became known as the Kirk Complex North and Kirk Complex South. As of the preparation date of this report the South Complex is completely contained while the Kirk North Complex is 90% contained. A total of 86,000 acres of extremely rugged and steep forest land is involved within the perimeter of both the North and South Complexes.

The Heritage Resources protection effort in the Kirk Fire Complex consisted of the early involvement of in the fire suppression effort, involvement in the rehabilitation of fire lines and roads, and involvement in the Burned Area Evaluation and Rehabilitation (BAER) process. This report documents the process, findings, and recommendations of the BAER effort.

The BAER Team

The Forest assembled a team of environmental specialists to assess the watershed and other rehabilitation needs of watersheds and other resources within the burned area. This team was convened on October 13, 1999, in King City. The Team consisted of specialists in hydrology, soil, geology GIS, aquatic and terrestrial biology, botany, engineering, trails and recreation, and heritage resources. The heritage resources group consisted of Team Leader Stephen Horne, Andrea Maliarik, Anne Boyd, James Lopez, and Dorit Phinney.

Heritage BAER Process

The process includes several steps: validation of the APE, screening of known sites against criteria, field inspection of sites thought to be at risk, development of a final list of sites at risk, and development of treatment and monitoring recommendations.

Validation of the APE

The APE of the Kirk Complex was defined at the outset of the fire as the fire perimeter, access roads, and watershed within one mile of the fire perimeter. This original definition was expanded given findings concerning variation in burn severity and expectations concerning downstream flows and sedimentation. Thus the APE of the Kirk Complex became the fire perimeter, access roads and camps outside the burn perimeter, and downstream areas outside the burn perimeter where increased sedimentation and peak flows are expected during winter storms. Portions of the Big Sur, Carmel, San Antonio, and coastal watersheds were added to the APE because of the potential for flooding in and along the streams.

Screening

The Team considered known sites and localities from Forest Service records, from the files of the Northwest Information Center, California Department of Transportation, Fort Hunter-Liggett, and California Department of Parks and Recreation (Pfeiffer Big Sur State Park). Three hundred three (303) sites and localities were

situated within the APE. The Team placed all sites within one of three categories: sensitive, moderately sensitive, and not sensitive. The “not sensitive” category consisted of sites and localities which are known to be durable and which were not thought to be at risk from post-fire effects. This category included rock features and bedrock mortars, roads, and most trails. The “sensitive” category includes rock art, standing structures, developed midden deposits, and cemeteries. “Moderately sensitive” included everything else. Sites and locations in the “not sensitive” category were not considered further.

Sites and locations in the “sensitive” and “moderately sensitive” categories were compared to the mapped locations of high and moderate burn severity, to areas of expected high flood risk, to areas of high landslide risk, and proximity to heavily used recreational facilities. Sensitive and moderately sensitive sites and localities which co-occurred with land areas deemed at risk were assembled into a list of sites to be field inspected. This list was comprised of one hundred twenty two sites and localities.

The sites were inspected primarily during on-the-ground survey, but because of dangerous conditions several could be inspected only through aerial reconnaissance and others were not inspected at all. In some cases, subsequent information indicated that placement on the list was unwarranted and, on the other hand, sites and locations were added as indicated. In all, 122 sites and locations were of concern.

The purpose of the field inspections was to determine whether conditions existed which would indicate a potential “BAER Emergency.” A BAER Emergency rating was assigned when there was a significant risk that the site or location could be damaged by recreation use, flooding, landslide, or sedimentation. After completion of field inspection, 15 sites were advanced to a “BAER Emergency” status.

One site (standing structure) is situated on Fort Hunter-Liggett; recommendations for preservation will be communicated directly to the Fort. Two sites (standing structures) at risk are situated on private land and “letters of warning” will be sent to the property owners. The remaining 12 properties are situated on National Forest System land and recommendations for mitigation and protection have been developed for funding (Table 1). Several sites have been lumped where the risk and the recommended treatments are substantially similar.

BAER Identifier	Site Numbers	Nature of Risk

Table 1: List of Sites and Localities at Risk on NFS Lands

Treatment and Monitoring Recommendations

Treatment and monitoring recommendations were developed for each NFS property thought to be at risk. Treatment recommendations also were developed for one site on Fort Hunter-Liggett and for two potentially historic structures situated on private land—all of which are thought to be at risk from flooding and erosion.

Treatment and monitoring recommendations for all sites except the site on Fort Hunter-Liggett are detailed in the attached Heritage BAER Assessment and Recommendation Forms. Table 2 summarizes the recommendations

BAER Identifier	Site Numbers	Treatment

Table 2: Treatment Recommendations by BAER Site

SITE IDENTIFIER	TREATMENT	MONITORING	VALUE

Table 3: Summary of Treatment and Monitoring Costs

Heritage BAER Assessment and Recommendation Forms

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITES 1 AND 2
CHURCH CREEK AREA

Resource Identifier: Heritage BAER Sites 1 and 2 (FS No. 51-230 and No. 51-387)

Initial Concerns: Heat and smoke damage from fire, surface erosion, surface impacts from falling snags.

Findings of On-ground Survey: Area denuded of screening vegetation with rock shelters plainly visible from nearby hiking trail; previously brush and trees provided a visual screen from the trail. Site surface and artifacts exposed. Not at risk from surface erosion; risk from falling trees regarded as minimal.

Additional Information or Findings: Trail very close [20-25 meters (65-80 ft)].

Emergency Determination (Statement): These sites are at risk from damage from increased public visitation due to loss of shielding vegetation along popular Wilderness trail.

Treatments to Avoid the Emergency

Treatment Type(s):

1. Limited Data Collection
2. Signing and Visitor Information

Treatment Objectives:

1. Baseline information collection in order to preclude loss due to vandalism, theft or inadvertent misuse. Baseline information necessary also for effectiveness monitoring.
2. Signing and visitor information to educate public about behavior at sensitive sites.

Treatment Description:

1. Baseline data collection includes photography, scaled illustration of rock paintings, mapping of features and artifacts, and collection of diagnostic or sensitive artifacts.
2. Signing to close site area to camping and to inform public of penalties for artifact collection. .

Treatment Cost:

Staffing Needs:

<u>Position</u>	<u>Grade</u>	<u>Days</u>	<u>Cost/Dy</u>	<u>Cost</u>
Archeologist	GS-11	5	250	1250
Archeologist	GS-09	7	230	<u>1610</u>
				2860

Supplies and Other Direct Costs:

Illustrations (contract)	1500	
Vehicle	180	
Vehicle	25	
Curation	50	
Signing	500	
Photography (contract)	2500	
Documentation	200	
Film and Developing	300	
Video	25	
Miscellaneous supplies	<u>25</u>	
	<u>5305</u>	
Treatment Subtotal		8165

Monitoring Program:

1. A monitoring program is proposed in order to gauge effectiveness of the treatment, need to maintain the treatment, need for retreatment, and to track recovery of vegetation. The monitoring program would be conducted by the Forest's Heritage Staff augmented by Partners in Preservation volunteer site stewards. Monitoring frequency: quarterly during period the trails are closed for post-fire recovery and bimonthly thereafter for three years. Results of monitoring documented in final report distributed to Information Center, California Office of Historic Preservation, and Regional Office for distribution to BAER archeologists.

Monitoring Cost:

Position	Grade	Days	Cost/Dy	Cost	
Archeologist	GS-09	20	230	4600	
Archeologist	GS-11	3	250	<u>750</u>	5350
Supplies and Other Direct Costs:					
Film and Developing				540	
Mileage					400
Monitoring Report				<u>250</u>	
				<u>1190</u>	
			Monitoring Subtotal		<u>6540</u>
			Total Treatment and Monitoring		14705

Form Prepared by Stephen Horne, Forest Archeologist 10/27/1999

Kirk Fire BAER Archaeology Properties at Risk – Value/Cost Analysis Worksheet

Resource Identifier: Heritage BAER Sites 1 and 2 (FS No. 51-230 and 51-387)

Property at Risk: These two sites are at risk from effects related to visitation. Visitation will increase because the sites, previously hidden from view from the Church Creek trail, are now clearly visible. The rock shelters are inviting and serve as an attractant. Visitors have many adverse effects on fragile rock shelters. Inadvertently destructive actions of campers and visitors include building campfires in the shelters, excavating waste holes and fire pits, and brushing against or otherwise touching fragile rock paintings. Deliberate depreciative behavior includes artifact theft and defacement of rock art or rock surfaces. Left untreated the effects will be adverse.

Value of Property:

Item	Cost/Day	Days	Supplies/Equipment	Cost
1. Cost of Extended Phase I (as proposed)				8165
2. Cost of Evaluation (Phase II Archeological Evaluation)				30000*
3. Value of Structure				
4. Cultural Value (Describe)				100,000**
5. Recreational Value (Describe)				

Total Value of Property
130,000

Evaluation Program Costs:

***Cost includes detailed contour mapping, excavation units and shovel test pits, artifact analysis, transportation, per diem, and preparation of documentation.**

****This cost is based on an estimated overall cultural value including the value for traditional cultural practitioners and the associated value of the important cultural artifacts previously removed from these shelters. Estimated cultural value for this area is \$100,000.**

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITES 3 AND 5
CARRIZO AREA

Resource Identifier: Heritage BAER Sites 3 and 5 (FS No. 51-187 and 51-267)

Initial Concerns: Increased vehicular and camping access due to removal of vegetative barriers

Findings of On-ground Survey: On-ground survey validated Initial Concerns.

Emergency Determination (Statement): Sites are at increased risk from damage from camping, other visitation, and vehicle trespass due to loss of covering and screening vegetation.

Treatments to Avoid the Emergency;

Treatment Type(s):

1. Barriers
2. Signing
3. Limited data collection

Treatment Objectives:

1. Prevent vehicular trespass
2. Prevent vehicular trespass and on-site camping
3. Recover diagnostic and other sensitive artifacts in order to preclude loss through artifact theft or vandalism

Treatment Description:

1. Temporary fence or native rock barriers along Del Venturi Rd. or other strategic locations designated by RD personnel
2. Carsonite "No Motor Vehicle" signs at strategic locations designated by RD personnel
3. Controlled surface collection augmented by detailed mapping and illustration of artifacts and photographs. Documentation in updated site record and artifact curation in Forest's designated repository. Documentation of rock art at Site No. 51-267 with measured drawings and photographs.

Treatment Cost:

Staffing Needs:

Position	Grade	Days	Cost/Dv	Cost
Archeologist (Imp Ldr) GS-11	5	250	1250	
Archeologist	GS-09	11	230	2530
Recreation Tech	GS-07	6	150	<u>900</u>
				4680

Supplies and Other Direct Costs:

Fence supplies	625	
Illustrations (contract)		1000
Vehicles	210	
Curation	50	
Signs		50
Photography (contract)	1000	
Documentation	200	
Film and Developing		100
Video		25

Miscellaneous supplies	<u>25</u>	
		<u>3280</u>
Treatment Subtotal		7960

Monitoring Program:

2. A monitoring program is proposed in order to gauge effectiveness of the treatment, need to maintain the treatment, need for retreatment, and to track recovery of vegetation. The monitoring program would be conducted by the Forest's Heritage Staff augmented by Partners in Preservation volunteer site stewards. Monitoring frequency: bimonthly for three years. Results of monitoring documented in final report distributed to Information Center, California Office of Historic Preservation, and Regional Office for distribution to BAER archeologists.

Monitoring Cost:

Position	Grade	Days	Cost/Dy	Cost	
Archeologist	GS-09	20	230	4600	
Archeologist	GS-11	3	250	<u>750</u>	
					5350

Supplies and Other Direct Costs:

Film and Developing				500	
Mileage					400
Monitoring Report				<u>250</u>	
				<u>1150</u>	
			Monitoring Subtotal		<u>6500</u>
			Total Treatment and Monitoring		14460

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 4
WAGON CAVE AREA

Resource Identifier: Heritage BAER Site 4 (FS No. 51-200, -210, -211, -502, -503)

Initial Concerns: Heat and damage from fire, exposure of rock shelters and archeological deposits by removal of vegetative screening and vegetative cover.

Findings of On-ground Survey: On-ground survey did not validate heat and smoke damage but found removal of vegetative screening and protective cover.

Additional Information: Five sites in close proximity with one integrated treatment program.

Emergency Determination (Statement): Sites are at risk from visitation-related damage resulting from decreased vegetative screening and covering vegetation.

Treatments to Avoid the Emergency;

Treatment Type(s):

1. Signing and registration box
2. Baseline data collection

Treatment Objectives:

1. Signing and information to educate public about behavior at sensitive sites.
2. Baseline data collection in order to preclude loss due to vandalism, theft or inadvertent misuse. Baseline information necessary also for effectiveness monitoring.

Treatment Description:

1. Installation of standard protective Heritage Resource sign at parking area .
2. Controlled surface collection augmented by detailed mapping and illustration of artifacts and photographs. Documentation in updated site record and artifact curation in Forest's designated repository. Documentation of rock art with measured drawings and photographs.

Treatment Cost:

Staffing Needs:

Position	Grade	Days	Cost/Dy	Cost
Archeologist (Imp Ldr)	GS-11	10	250	2500
Archeologist	GS-09	22	230	5060
Recreation Technician	GS-07	2	150	<u>300</u>
				7860

Supplies and Other Direct Costs:

Illustrations (contract)	3000
Vehicles	500
Curation	100
Signs	50
Photography (contract)	2500
Documentation	200
Film and Developing	250
Video	50
Register Box	225
Miscellaneous supplies	<u>25</u>

Treatment Subtotal	<u>6900</u>	14960
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Monitoring Program:

A monitoring program is proposed in order to gauge effectiveness of the treatment, need to maintain the treatment, need for retreatment, and to track recovery of vegetation. The monitoring program would be conducted by the Forest's Heritage Staff augmented by Partners in Preservation volunteer site stewards. Monitoring frequency: bimonthly for three years. Results of monitoring documented in final report distributed to Sonoma State Information Center, California Office of Historic Preservation, and Regional Office for distribution to BAER archeologists.

Monitoring Cost:

Position	Grade	Days	Cost/Dy	Cost
Archeologist	GS-09	20	230	4600
Archeologist	GS-11	3	250	<u>750</u>
				5350

Supplies and Other Direct Costs:

Film and Developing	500	
Mileage		400
Monitoring Report	<u>250</u>	
	<u>1150</u>	
Monitoring Subtotal		<u>6500</u>
Total Treatment and Monitoring		21460

Form Prepared by Stephen Horne, Forest Archeologist 10/27/1999

Kirk Fire BAER Archaeology Properties at Risk – Value/Cost Analysis Worksheet

Resource Identifier: BAER Site 4 (FS No. 51-200, -210, -211, -502, -503)

Property at Risk: The properties are at risk from artifact breakage, theft of surface artifacts, illicit excavation either for the purposes of artifact recovery or for camping-related reasons (sanitation, waste disposal, fire pits), and prolonged exposure of the site through retarded recovery of covering vegetation. Rock art is at risk due to smoke damage from campfires and through vandalism. These properties have both archeological value and cultural value to Salinan Indians. The properties are not at risk of complete loss but at significant risk of deterioration and irreplaceable loss. Untreated, the effects will be adverse.

Value of Property:

Item	Cost/Day	Days	Supplies/Equipment	Cost
6. Cost of Extended Phase I as described				8165
7. Cost of Evaluation				50000
8. Value of Structure				
9. Cultural Value (Describe)				25000
10. Recreational Value (Describe)				
Total Value of Property				83165

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 7
AVILA RANCH ROAD

Resource Identifier: Heritage BAER Site 7 (FS No. 51-538)

Initial Concerns: This rock shelter and rock art site is within the burned area. There is a road adjacent to the site and the initial concern was that the increase in runoff by the fire may cause road drainage to enter the site and cause damage or destruction.

Findings of On-ground Survey: The survey concluded that there would be an increase in runoff both above the road and from the slopes draining into the site. The upslope area burned at moderate intensity. The existing debris basin for the road forces drainage within one foot of the rock shelter. The natural drainage was diverted next to the rock shelter by creation of the debris basin. The survey has determined that the problem does not lie with the road drainage per se, but rather with the debris/sediment retention basin that was built to accommodate road drainage.

Emergency Determination (Statement): Fire-induced increases in peak flow from an existing drainage could allow flooding into a small rock shelter and cause exfoliation of or damage to a rock art panel.

Treatments to Avoid the Emergency;

Treatment Type(s):

1. Expanded Phase I Investigation and Limited Evaluation Program
2. Reconstruct drainage by using earth-moving equipment

Treatment Objectives:

1. To define site boundary and identify areas where surface can be recontoured without damaging critical heritage resources and document threatened rock art.
2. To divert water from the existing (unnatural) drainage away from the rock shelter.

Treatment Description:

1. Document rock art with photography and measured drawings and text description. Excavate standard shovel test pits in order to define site boundary and presence/absence of deposit and disturbance. Excavate one to two standard excavation units (1mx1m) where indicated in order to evaluate significance of archeological deposit.
2. Use equipment to build a berm to divert flows away from the site. Breach debris basin berm and install culvert as prescribed by Engineer.

Treatment Cost (archeological investigation only):

Staffing Needs:

Position	Grade	Days	Cost/Dy	Cost
Tribal Liaison	GS-7	1	180	180
Archeologist	GS-11	8	250	2000
Archeologist	GS-09	25	230	5750
Recreation Tech	GS-05	5	150	<u>750</u>
				8680

Supplies and Other Direct Costs:

Illustrations (contract)	250
Vehicles	500
Curation	100
Documentation	250
Film and Developing	250

Video	50	
Radiocarbon	500	
Tool Replacement	100	
Per Diem	1000	
Lithic and other cultural Element analysis	<u>1500</u>	
	<u>4500</u>	
Subtotal Treatment		13180

Monitoring Program:

3. A monitoring program is proposed in order to gauge effectiveness of the treatment, need to maintain the treatment, and need for retreatment. The monitoring program would be conducted by the Forest's Heritage Staff. Monitoring frequency: monthly during first rainy season. Yearly thereafter. Results of monitoring documented in final report distributed to Sonoma State Information Center, California Office of Historic Preservation, and Regional Office for distribution to BAER archeologists.

Monitoring Cost:

<u>Position</u>	<u>Grade</u>	<u>Days</u>	<u>Cost/Dv</u>	<u>Cost</u>
Archeologist	GS-09	14	230	3220
Archeologist	GS-11	3	250	<u>750</u>
				3970

Supplies and Other Direct Costs:

Film and Developing	100	
Mileage		200
Monitoring Report	<u>250</u>	
	<u>500</u>	
Monitoring Subtotal		<u>4520</u>
Total Treatment and Monitoring		17700

Form Prepared by Stephen Horne, Forest Archeologist 10/27/1999

Kirk Fire BAER Archaeology Properties at Risk – Value/Cost Analysis Worksheet

Resource Identifier: Heritage BAER Site 7 (FS No. 51-538)

Property at Risk: This site is substantial risk. The rock art is at risk if the treatment is foregone and the archeological deposit will continue to be impacted by surface erosion and sedimentation.

Value of Property: The value of this archeological site consists of archeological value and cultural value. The archeological value is assigned on the basis of total data recovery and the cultural value of the site is the value of the site for traditional cultural practices of the Salinan Indians. Untreated the effects will be adverse.

Item	Cost/Day	Days	Supplies/Equipment	Cost
11. Cost of Phase II (evaluation)				13000
12. Cost of Data Recovery (Phase III or data recovery)				79200*
13. Value of Structure				
14. Cultural Value (Describe)				30000**
15. Recreational Value (Describe)				
Total Value or Property				110500

*Site is approximately 7200 m sq (120 m x 60 m). Assume a deposit depth of .5 meters and a 2 percent recovery, or excavation of 72 sq meters at \$1100 per sq m is \$79200.

**Cultural value of site to Salinan Indians is \$200 per individual visit, 50 visits per year for three years (150 visits x 200) is \$30000

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 11

“GOLDEN STAIRCASE”

Resource Identifier: Heritage BAER Site 11 “Golden Staircase”

Initial Concerns: Undermining by increased flows in ephemeral drainage.

Findings of On-ground Survey: Site inspection by Steven Dean, confirms Initial Concerns.

Emergency Determination (Statement): Property is at risk from undermining by channel with increased flow and sediment load.

Treatments to Avoid the Emergency;

Treatment Type(s): Documentation

Treatment Objectives: Preserve site as information as insurance against loss.

Treatment Description: Archeological data collection including completing a formal site record consisting of maps, profile drawings, detail sketches, and measured photographs. Background research on history of construction and use.

Treatment Cost:

Staffing Needs:

Position	Grade	Days	Cost/Dy	Cost
Archeologist	GS-11	3	250	750
Archeologist	GS-09	8	230	<u>1840</u>
				2590

Supplies and Other Direct Costs:

Vehicles			250	
Film				50
Per diem			<u>100</u>	
				<u>400</u>
		Subtotal Treatment		2990

Monitoring Program:

Monitoring will be undertaken to identify changes in condition and to prepare proposals for additional treatment if undermining is occurring. Monitoring monthly during first rainy season and bimonthly for the balance of the first year. Monitoring will be documented in a report distributed to the Sonoma State Information Center, the California SHPO, and the Regional Office.

Monitoring Cost:

Position	Grade	Days	Cost/Dy	Cost
Archeologist	GS-09	8	230	1840
Recreation Tech	GS-05	8	150	<u>1200</u>
				3040

Supplies and Other Direct Costs:

Vehicles			250	
Film				<u>25</u>

Subtotal Monitoring
Total Treatment and Monitoring

275
3315
6305

Form Prepared by Stephen Horne, 10/27/1999

Kirk Fire BAER Archaeology Properties at Risk – Value/Cost Analysis Worksheet

Resource Identifier: Heritage BAER Site 11 “Golden Staircase”

Property at Risk: Property is at risk of complete loss by undermining at the gully where high flows with high sediment loads are expected.

Value of Property: The Golden Staircase is a CCC stone structure of extremely large dimensions and sophisticated engineering. It is a nationally significant example of CCC stonework, a class of structure which is disappearing. The structure could not be reproduced without substantial expense. This site is probably eligible for the National Register of Historic Places, either as a stand-alone feature or as a Element of the historic Pine Ridge Trail. Untreated any loss or deterioration will be an adverse effect.

This feature adds value to the recreational experience of hikers on the Pine Ridge Trail, one of the Forest's most popular trails.

Item	Cost/Day	Days	Supplies/Equipment	Cost
16. Cost of Documentation				
17. Cost of Data Recovery				
18. Value of Structure				200,000
19. Cultural Value (Describe)				
20. Recreational Value (Describe)				75,000*
Total Value or Property				275,000

*The Golden Staircase is estimated to add \$25 to the visitor experience of each hiker. At 1000 hikers per year for three years, the recreational value of the Golden Staircase is \$75000

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 12
CHEW'S RIDGE TCP

Resource Identifier: Heritage BAER Site 12 (Proposed Traditional Cultural Property on Chews Ridge)

Initial Concerns: The fire on Chews Ridge burned vegetation within the proposed TCP, thus creating openings for future illegal OHV use.

Findings of On-ground Survey: Field Survey confirmed that vegetation loss has occurred as a result of the fire. Illegal off-highway vehicles will have more areas to enter in the future.

Emergency Determination (Statement): The Chews Ridge TCP is at risk for degradation and surface erosion caused by increased illegal OHV use as a result of loss of vegetation caused by the fire. Risk of retarded return of natural covering vegetation is also apparent.

Treatments to Avoid the Emergency;

Treatment Type(s): Placement of a temporary fence against illegal OHV entry into the TCP

Treatment Objectives: To bar entrance into the TCP by illegal OHV users. There are existing OHV entry points off the Tassajara Road that need to be blocked off.

Treatment Description: Place 6-12 inch angular rock in a berm 3 feet high across the existing entry points; alternative treatment is construction of temporary fence.

Treatment Cost:

Staffing Needs:

Position	Grade	Days	Cost/Dy	Cost
Archeologist	GS-09	3	230	690
Recreation Technician	GS-05	3	150	450
Engineer	WG-11	4	275	1100
Tribal Liaison	GS-07	1	150	<u>150</u>
				2390

Supplies and Other Direct Costs:

Fencing (1/4 mile)		300
Vehicles	600	
Rock		500
Loader		500
Film		25
Signs		<u>100</u>
		<u>2025</u>
	Treatment Subtotal	4415

Monitoring Program:

A monitoring program is proposed in order to gauge the effectiveness of the treatment, the need to maintain the treatment, and any needs for additional treatment. The monitoring program would be conducted by a Recreation Technician, possibly in cooperation with the Monterey Institute Research in Astronomy (MIRA) Observatory's caretaker. Monitoring frequency: the monitoring should take place bimonthly for the next 3 years. Results of monitoring will be presented in a final report prepared at the end of the 3 year monitoring period. Results of the monitoring will be distributed to the Sonoma State Archaeological Information Center, the California Office of Historic Preservation, and the Regional Office for distribution to BAER archaeologists.

Monitoring Cost:

<u>Position</u>	<u>Grade</u>	<u>Days</u>	<u>Cost/Dy</u>	<u>Cost</u>
Recreation Technician	GS-07	9	150	1350
				1350
Supplies and Other Direct Costs:				
Mileage			400	
Monitoring Report				<u>250</u>
				<u>650</u>
		Monitoring Subtotal		<u>2000</u>
		Total Treatment and Monitoring		6415

Form Prepared by Anne Boyd, BAER Team Archaeologist 10/27/99

Kirk Fire BAER Archaeology Properties at Risk – Value/Cost Analysis Worksheet

Resource Identifier: Heritage BAER Site 12 (Proposed Traditional Cultural Property, Chews Ridge)

Property at Risk: Entire property may be affected by OHV trespass. Effects of the trespass will be physical and cultural. Physical effects include creation of trails and ways and retarding of revegetation. Temporary physical effects include visual and aural intrusion. Cultural effects include a diminishing of the spiritual value of the site through uses deemed incompatible with the cultural values attached to the property. Untreated the effect will be adverse.

Value of Property:

Item	Cost/Day	Days	Supplies/Equipment	Cost
21. Cost of Documentation				
22. Cost of Data Recovery				
23. Value of Structure				
24. Cultural Value (Describe)				100,000*
25. Recreational Value (Describe)				
26. Other: Further Non-BAER Treatments (revegetation and permanent Barriers)				<u>5,000</u>
Total Value of Property				105,000

*Value assigned on the basis of a worth of \$200/dy for each traditional cultural visit to the site for ceremony, gathering, and other cultural practices. Assume 500 individual visits to the site for cultural reasons in the three years following the fire.

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 8 SECOND CABIN (PRIVATE PROPERTY)

Resource Identifier: Heritage BAER Site 8: The “Second” Cabin (CA-MNT-1229H)

Initial Concerns: Cabin located adjacent to Devils Canyon may be in the floodplain. Forest Service hydrologists predict increased peak flows 80% above normal for the two year storm event. Slopes above the cabins burned moderately and there is the potential for debris flows to form in intermittent channels.

Findings of On-ground Survey: There does not appear to be a threat of flooding to the “Second” Cabin from Devils Canyon (fork of Big Creek), according to Forest Service hydrologists. However, there may have historically been debris flows originating on the slopes above the cabin. One potential source area is located on the slopes directly above the deck of the cabin. Should a debris flow occur here, it could very likely damage or destroy the cabin and/or deck and harm the occupants. There is currently a small rock and soil deflector wall built above the deck (approximately 2 feet high). This channel appears to function well in diverting normal runoff from storm events.

Emergency Determination (Statement): Because of moderate burn intensity on steep south-facing slopes above Devils Canyon, there is increased potential for a debris flow to impact the “Second” Cabin, resulting in damage or destruction to the cabin and harm to its occupants. A debris flow channel currently lies above the deck of the cabin and could direct flows across the deck area and potentially also damage the house if the deck is not structurally detached from the cabin.

Treatments to Avoid the Emergency:

Treatment Type(s): Deflector wall construction

Treatment Objectives: To divert debris flow channel away from this historic structure and to offer greater stability to the cabin

Treatment Description: Extend the height of the current channel deflector wall. Use a backhoe or excavator to remove soil from the channel and to create a berm or wall at least 4 feet high. Detach the deck structurally from the cabin. This will offer greater stability to the cabin if the deck should be hit by a debris flow.

Treatment Cost:

Supplies and Other Direct Costs:

<u>Description</u>	<u>Cost (includes mobilization)</u>	<u>Days</u>	<u>Total Cost</u>
Tractor to excavate channel and build berm	\$2500.00	1	\$2500.00
Detach deck from House	\$ 100.00	.5	\$ 100.00

Total

\$2600.00

Form Prepared by: Anne Boyd, Forest Service BAER Archaeologist/Geologist, 10/27/1999

Heritage BAER Assessment and Recommendation Forms

KIRK HERITAGE BAER SITE 9 “HAIDA (or TOTEM) CABIN” (PRIVATE PROPERTY)

Resource Identifier: Heritage BAER Site 9: The Haida House, or “Totem” Cabin (CA-MNT-1229H)

Initial Concerns: Cabin located adjacent to Devils Canyon may be in the floodplain. Forest Service hydrologists predict increased peak flows 80% above normal for the two year storm event. Slopes above the cabins burned moderately and there is the potential for debris flows to form in intermittent channels.

Findings of On-ground Survey: There does not appear to be a threat of flooding to the “Totem” Cabin from Devils Canyon (fork of Big Creek), according to Forest Service hydrologists. However, there have historically been debris flows originating on the slopes above the cabin. One such source area is located on the slopes directly above the cabin. Should a debris flow occur here, it could very likely damage or destroy the cabin and harm the occupants. At one time, there may have been a small deflector wall between the cabin and the channel above.

Emergency Determination (Statement): Because of moderate burn intensity on steep south-facing slopes above Devils Canyon, there is increased potential for a debris flow to impact the “Totem” Cabin. A debris flow channel currently lies above the cabin, and would likely direct flows into the cabin, should such an event occur.

Treatments to Avoid the Emergency;

Treatment Type(s): Drainage diversion, deflector wall construction

Treatment Objectives: To divert debris flow channel away from this historic structure

Treatment Description: Build a diversion channel to divert flow east of the cabin into an existing ephemeral channel. Use small tractor (D6) or similar earthmoving equipment to construct a channel and use the excavated material to build a berm or wall at least 6 feet high. A large redwood log would have to be moved in order to build the channel and berm. If possible, use this log to help reinforce the berm. Bucked sections of redwood logs also lie upslope within the channel. These should be removed.

Treatment Cost:

Supplies and Other Direct Costs:

<u>Description</u>	<u>Cost (includes mobilization)</u>	<u>Days</u>	<u>Total Cost</u>
Tractor to excavate channel and build berm	\$2500.00	1-2	\$3750.00
Remove logs and debris from channel	\$ 500.00	1	<u>\$ 500.00</u>
Total			\$4250.00

Form Prepared by:
Anne Boyd, Forest Service BAER Archaeologist/Geologist

**BURNED AREA EMERGENCY REHABILITATION (BAER) TREATMENTS
OF ARCHAEOLOGICAL RESOURCES LOCATED WITHIN
THE TURTLE FIRE AREA, FRONT COUNTRY RANGER DISTRICT,
SAN BERNARDINO NATIONAL FOREST, CALIFORNIA**

Prepared by:

Douglas H. Milburn
Archaeologist

Heritage Resources Section
Angeles National Forest

November 23, 1999

MANAGEMENT SUMMARY

This heritage resource report provides documentation of burned area emergency rehabilitation (BAER) measures which were implemented to protect archaeological resources located within the Area of Potential Effect (APE) of the Turtle Fire Incident. During July 25-28, 1999, the Turtle Fire burned about 4035 acres of predominately chaparral and sparse pinyon-juniper vegetation in the vicinities of West Cajon Valley, Baldy Mesa, and Phelan, California. Approximately 1430 acres of the burned area are located within administrative boundaries of the Front Country Ranger District, San Bernardino National Forest (SBF).

The Turtle Fire Burned Area Report, dated August 5, 1999, identified three archaeological sites within the APE and proposed watershed treatment measures for two of these sites. Subsequent examination of archival records and field work during October and November, 1999, resulted in identification of three additional archaeological resources within the APE. On-the-ground inspection determined that the burning of vegetation by the Turtle Fire, with one exception, resulted in comparatively minimal potential for damaging heritage resources and that most potential for site damage are related to pre-existing conditions (i.e, authorized use/maintenance of Road 3N24 and OHV trails and, also, rampant illegal OHV activities) which are largely beyond the scope of the BAER process. Based on the updated information, alternative BAER treatments for all six archaeological sites located in the APE were proposed and authorized. The BAER treatments for the Turtle Fire were completed between November 15 to November 23, 1999, at considerably less cost than estimates developed for the earlier proposals.

Although exempt from National Environmental Protection Act (NEPA) analysis, BAER treatments are not exempt from the processual mandates of Section 106 of the National Historic Preservation Act of 1966 (16 USC 470 [NHPA]). The BAER watershed treatments completed for the Turtle Fire comply with Section 106 requirements, as authorized under provisions of the Regional Programmatic Agreement.

It is important to note that five of the archaeological sites identified within the Turtle Fire APE are also located within the APE established for the Baldy Mesa Off-Highway Vehicle (OHV) Plan. On June 10, 1998, the State Historic Preservation Officer (SHPO) notified the SBF that a clear description and "finding of effect" for the OHV undertaking has not been provided and that SHPO cannot concur that SBF identification efforts meet applicable standards. With this in mind, Turtle Fire BAER treatments were developed for consistency with the strong presumption that additional heritage resource identification efforts and mitigation measures will be proposed as part of NHPA, Section 106, processual requirements for the Baldy Mesa OHV Plan undertaking.

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**BURNED AREA EMERGENCY REHABILITATION (BAER) TREATMENTS
OF ARCHAEOLOGICAL RESOURCES LOCATED WITHIN
THE TURTLE FIRE AREA, FRONT COUNTRY RANGER DISTRICT,
SAN BERNARDINO NATIONAL FOREST, CALIFORNIA**

Introduction

This heritage resource report provides documentation of burned area emergency rehabilitation (BAER) measures implemented to protect archaeological resources located within the Area of Potential Effect (APE) of the July 25-28, 1999 Turtle Fire Incident, Front Country Ranger District, San Bernardino National Forest (SBF), California. The Turtle Fire burned approximately 4035 acres of predominately chaparral and sparse pinyon-juniper vegetation in the vicinities of West Cajon Valley, Baldy Mesa, and Phelan. Approximately 1430 acres of the wildfire area were located within administrative boundaries of the SBF.

It is well known that wildfire incidents such as the Turtle Fire have potential to damage or destroy heritage resource properties through direct effects, such as burning and smoke damage, and also through a variety of indirect effects, including fire suppression measures, soil movement caused by subsequent storm precipitation, increased artifact looting, unauthorized use of Off-Highway Vehicles (OHVs), and implementation of rehabilitation treatments. These wildfire-related processes may alter the context of archaeological remains vital to any scientific analysis and interpretation and, in the worst cases, have potential to completely destroy irreplaceable heritage resources.

Forest Service authority, policy, and direction authorizes the use of BAER funding for protection of archaeological and historic resources from wildfire-caused watershed damage and, also, protection of these resources from various proposed watershed treatments. In addition to specific land protection measures, archaeological survey is considered a legitimate use of BAER funds. While BAER treatments are exempted from National Environmental Protection Act (NEPA) analysis, they are not exempt from the processual mandates of Section 106 of the National Historic Preservation Act of 1966 (16 USC 470 [NHPA]).

Report Objectives

The objectives of this report are to:

- (1) provide more accurate and updated identification of all heritage resource sites located within the APE of the Turtle Fire watershed emergency.
- (2) provide updated determinations of direct and indirect effects, and potential future effects, of the Turtle Fire watershed emergency related to heritage resources (e.g., potential fire-related soil erosion, debris flows, opening up site accessibility/visibility to artifact looting/OHV travel, implementation of rehabilitation treatments, etc.).

(3) Describe BAER treatments implemented for the purpose of prohibiting future damage to Class I Heritage Resource properties (historic and prehistoric resources determined as eligible to the National Register of Historic Places [NRHP] per criteria in 36 Code of Federal Regulations [CFR] 60.4). It is noted that, per Forest Service Manual (FSM) 2361 direction, Class II sites (heritage resources with either unknown or not yet evaluated NRHP significance) are also afforded the same consideration and protection as Class I sites.

Heritage Resource Identification

Methodology.

Site identification and potential damage assessment for the Turtle Fire APE, reported herein, included the following methodologies:

- (1) Melinda Benton, SBF Certified Archaeological Surveyor conducted a search of archaeological site records and inventory reports contained within San Bernardino Forest Heritage Resource files and Regional Information Center of the California Archaeological Survey, San Bernardino County Museum of Natural History.
- (2) A field inspection was conducted by the writer to verify locations of all previously identified heritage resource sites throughout entirety of the Turtle Fire APE and to analyze potential effects related to watershed damage. In conformance with standards established for BAER-related heritage resource investigations in southern California, the APE is defined as all areas of burned vegetation, unburned areas with potential for fire-related soil erosion and debris flows, areas impacted by emergency suppression measures, and locations of ground-disturbing BAER treatments.
- (3) It is noted that, since no ground-disturbing BAER treatments are proposed for the Turtle Fire (other than those proposed as protection for heritage resources), no additional archaeological survey was undertaken to identify previously unknown heritage resources.

Recorded Heritage Resources.

The initial Burned Area Report, prepared in August, 1999, identified two Native American archaeological sites (F.S. No. 05-12-53-01 and F.S. No. 05-12-53-04) and one historic railway feature (CA-SBr-3420) located within the Turtle Fire area of burned vegetation. Subsequent review of SBF Heritage Resource records provided to the writer, along with the recent field site visitation, resulted in identification of three additional previously recorded archaeological/historic sites within the Turtle Fire APE (F.S. No. 05-12-53-02, F.S. No. 05-12-53-02, F.S. No. 05-12-53-13). All of these sites remain, as yet, unevaluated in terms of NRHP significance and integrity criteria and are, therefore, defined as Class II sites which are afforded the same consideration and protection as Class I sites (*Note: Forest Service [FS] site numbers are primarily used in this report because permanent trinomial designations do not appear on SBF Heritage Resource site records provided to the writer. Under terms of the Regional Programmatic Agreement, trinomial designations assigned by Regional Information Centers of*

the California Archaeological Survey must be incorporated into documentation submitted to SHPO for review).

Summary descriptions of identified heritage resources within the Turtle Fire APE are as follows :

(1) *FS No. 05-12-53-01 (Sanford Pass Prehistoric Site).* This site, first recorded in 1976, encompasses a multifunctional prehistoric site on a ridgeline saddle with dark middenous soils, fire affected rock, cores, choppers, scrapers, lithic debitage, and groundstone fragments. The prehistoric deposit has been subjected to extensive disturbances over many years, including the construction and use of Forest Service Road 3N24, construction of a concrete water storage tank, placement of an Off-Highway Vehicle (OHV) information sign, and use of an OHV route. Unauthorized OHV use is rampant in the general vicinity. Extensive gullies, associated with runoff from 3N04, have cut through the steep, sandy slopes containing cultural deposits. Recent site visits have detected subsurface deposits exposed in the gullies which extend to about 1.5 meters below the existing surface; however, past disturbances factors are not yet well defined and these cultural materials are not be *in situ*.

(2) *FS No. 05-12-53-02 (Baldy Mesa Prehistoric No. 2).* This site was described at time of recordation in 1976 as a prehistoric temporary vegetable processing site, possibly along a ridge trail, of probable limited significance. The site was recorded as containing a mylonite core and a granitic metate. Recent disturbances include use of the Baldy Mesa OHV trail which runs directly through the site and, also, Forest Service use of a mechanized backhoe tractor to close off unauthorized OHV routes. A visit to the site on 10-21-99 detected two core artifacts but could not relocate the metate. Since the burning of the Turtle Fire, there is evidence of increased unauthorized OHV in the immediate site vicinity.

(3) *FS No. 05-12-53-03 (Baldy Mesa Prehistoric No. 3).* This site was described at time of recordation in 1976 as a prehistoric temporary vegetable processing site, possibly along a ridge trail, of probable limited significance. The site was recorded as containing a single glaucophane schist metate artifact. Recent disturbances include use of the Baldy Mesa OHV trail which runs directly through the site. The site visit on 10-21-99 did not relocate the metate artifact.

(4) *FS No. 05-12-53-04 (Baldy Mesa Prehistoric No. 4).* This site was described in 1976 as a prehistoric temporary lithic processing station, and probable vegetable processing site, at junction of possible trails. At that time, the site contained lithic debitage of quartzite, mylonite, quartz materials and a quartzite hammerstone artifact. Disturbances include construction and maintenance of Forest Service Road 3N24 and the Baldy Mesa OHV trail, which run directly through the site. Relatively recent ground-disturbing use of mechanical equipment to close off an old road is also evident within site boundaries. During the site visit on 10-21-99 a number of quartzite chipped stone flakes were observed around margins of sand dunes.

(5) CA-SBr-3430 (Los Angeles and Independence Railway). This linear site is purported to be the remnants of the bed for the historic Los Angeles and Independence narrow gauge railroad constructed by Chinese laborers in 1874. Planned to run from Santa Monica to Independence, this ill-fated railroad venture was supposed to haul freight to the booming gold mines at Panamint City. After a number of financial setbacks, the project was abandoned in 1875. The visible span of this linear railroad feature within the Turtle Fire burned area, which is supposed to include a collapsed 300 foot tunnel and a construction camp near "the summit," is located at the base of the steep, highly erosive southern slopes of Baldy Mesa Ridge.

(5) FS No. 05-12-53-13 (Sanford Pass Road). This historic wagon route, developed by legendary wagon freighter, William Sanford, provided the primary access for wagons and freight haulers between San Bernardino Valley and the Mojave Desert between 1855 and 1861. The linear resource is cut into the steep side of the ridge immediately south of Sanford Pass and is comprised of an eroding narrow trail about 0.3 miles in length. The wagon trail, reinforced at several location by stacked stones, is clearly visible from the existing Forest Service Road on the opposite side of the narrow canyon running to Sanford Pass. FS No. 05-01-53-13 is located directly adjacent to areas burned by the Turtle Fire and enters the site boundaries of F.S No. 05-12-53-01.

Burned Area Emergency Rehabilitation Issues

Emergency Points of Damage.

Field work conducted by the writer on October 21 and 30, 1999, and also on November 10, 1999, when accompanied by Randy Davis, BAER Team Leader, and Daniel McCarthy, SBF San Jacinto District Archaeologist, resulted in updated analysis of the watershed threat to archaeological resources. This section provides summary of the updated determinations of potential effects to heritage resources within the Turtle Fire APE:

(1) *FS No. 05-12-53-01.* As noted in the initial Burned Area Report (See Appendix I), burning of vegetation around three sides of the site has potential to increase erosive processes which are already a large problem at this location. Cultural deposits in the sandy slopes on northern portions of the saddle, which have been dissected by large blowout gullies, are greatly at risk from winter storms. At the easternmost blowout area, subsurface cultural materials reaching about 1.5 meters in depth appear to be greatly at risk. However, the more southerly portions of the site, subjected to on-going adverse impacts from use of Road 3N24 and the OHV Trail, appear to be at minimal risk from watershed damage related to the Turtle Fire. Continued use of OHVs on the existing OHV Trail and vehicle use on Road 3N24, all of which require Section 106 consideration, are expected to increase the significant degree of cultural deposit disturbance at this site.

(2) *FS No. 05-12-53-02*. This site is situated along the main ridgeline and the burning of vegetation will have little natural erosive effects on remaining site deposits. However, continued use of OHVs on the existing OHV Trail, and, more importantly, unauthorized off-trail use of OHVs (due greater accessibility created by vegetation burning), may increase processes of erosion with associated artifact displacement.

(3) *FS No. 05-12-53-03*. This site is situated along the main ridgeline and the burning of vegetation will have little or none erosive effects on any potential remaining site deposits. The primary potential fire-related impact is the likelihood of OHVs leaving the trail due (to the greater accessibility created by the burning of vegetation). Continued use of OHVs on the OHV Trail may also have adverse effects on any remaining subsurface deposits.

(4) *FS No. 05-12-53-04*. Potential effects to this site were re-evaluated during field visits subsequent to the initial BAER Report assessment. The fire did not directly burn over most of the sand dune areas known to contain cultural materials. The burning of vegetation in the surrounding vicinity, scanty at best, is also expected to have little effect on site deposits. The greatest potential effect to site deposits is associated with a previous gully blowout (which follows an abandoned road segment) caused by water running off Road 3N24. Burning of upslope vegetation may somewhat increase erosive processes in this specific gully area. On-going use of OHVs on the existing OHV Trail and motor vehicle use on Road 3N24, all of which require Section 106 consideration, will continue to increase the degree of cultural deposit disturbance at this site.

(5) *CA-SBr-3430*. The burning of vegetation in the immediate vicinity of this railway bed linear resource, situated at the foot of the extremely steep western aspect of Baldy Mesa Ridge, is expected to greatly increase the large-scale cutting and gullying that is already destroying the remnants of this historic resource.

(6) *FS No. 05-12-53-13*. After close inspection of the historic wagon trail, it is determined that the burning of vegetation in the Sanford Pass vicinity will have no effect on this resource. The primary concern is that implementation of proposed BAER treatments for the adjacent F.S. No. 05-12-53-01 site not inadvertently damage the wagon trail resource. The Baldy Mesa OHV undertaking will need to address Section 106 issues at this site.

Initially Authorized BAER Prescriptions.

The Burned Area Report, dated August 5, 1999, proposed a number of treatment measures for two archaeological sites within the APE (FS Nos. 05-12-53-01 and 05-12-53-04), which were subsequently authorized by the Acting Regional Forester on August 11, 1999. These proposed land treatments included the following:

FS No. 05-12-53-01: It was initially determined to be more economical and "culturally sensitive" to preserve FS No. 05-12-53-01 in place rather than remove artifacts at risk.

The proposed treatments included placement of erosion matting to cover the most critical

area of the site and over the side of the steep slope, fence construction to provide protection from illegal OHV-use, and spreading native vegetation seeds to create ground cover, reduce run-off, and ensure retention of sediments.

FS No. 05-12-53-04: Site preservation was not considered cost-effective at this site and the authorized treatment was total removal of artifacts.

Description of Implemented BAER Treatments.

Based on the updated information retrieved during site visits by the writer in October and November, 1999, the previously proposed BAER treatments were determined to be ineffective, unnecessary, or beyond the scope of BAER authorization. With concurrence of the BAER Team Leader and the SBF, San Jacinto District Archaeologist, alternative treatments proposed by the writer were implemented at all archaeological sites within the Turtle Fire APE. Although final costs were not available at time of filing of this report, it is clear that the implemented alternative treatments required considerably less funding than the original proposals.

(Note: BAER treatment planning took into consideration that five of the archaeological sites identified within the Turtle Fire APE are also located within the APE established for the Baldy Mesa Off-Highway Vehicle Plan. In terms of Section 106 processual requirements, it is extremely important to note that the State Historic Preservation Officer (SHPO) notified the SBF on June 10, 1998 that a clear description and "finding of effect" for the OHV undertaking has not been provided by the SBF and that SHPO does not concur that SBF identification efforts meet applicable standards. With the strong presumption that additional heritage resource identification efforts and mitigation measures will be required as part of the Baldy Mesa OHV undertaking, Turtle Fire BAER treatments described in this report were developed for compatibility with these Section 106 processes).

Descriptions of BAER treatments completed for each archaeological site within the APE follow below:

- (1) *FS No. 05-12-53-01.* The earlier authorized treatments (sediment cloth, seeding, and fencing) were determined during on-the-ground inspections to be ineffective and/or unnecessary. The authorized placement of erosion cloth, as proposed in the initial Burned Area Report, was determined to not be a viable on the sand dune areas on the north slope of the saddle landform due to presence of three large gullies and presence of remaining chaparral vegetation. Germination of seeds on the highly unstable and unproductive sand dunes was determined to be as a probably ineffective measure. Likewise, temporary fencing to exclude OHVs was determined to be inappropriate due to attributes of the terrain and the presence of existing roads and trails which effectively channel traffic through the site. It was determined that the most critical BAER land treatments were required at the easternmost gully which cuts through visible subsurface cultural deposits in the sand dunes. To slow water flows during winter storms, three hay bale check dams were established in upper portions of the gully outside vertical and horizontal extent of site deposits. Water dissipaters comprised of loosely placed stone cobbles (which were gathered along Road

3N24, over 1/4 mile away from site boundaries) were placed below each check dam. The construction of these temporary straw check dam structures was accomplished by a BAER implementation team with input from SBF Engineering staff. The writer monitored the implementation process, and screened displaced soil/sediments through 1/8 inch screen, to ensure that ground disturbance was kept outside of archaeological site boundaries. The only other BAER treatment at this site was completion of an updated Site Record to provide current basinal data from which future erosional degradation can be compared.

(2) *FS No. 05-12-53-03*. The site was not identified, and no treatment was proposed, in the initial BAER report. The most effective treatment of this site was subsequently determined to be the preparation of an updated Site Record as basinal data from which any future degradation can be compared.

(3) *FS No. 05-12-53-03*. The site was not identified, and no treatment was proposed, in the initial BAER report. A Site Record update was subsequently completed as the only practical treatment. It is noted that no cultural materials are currently visible at this site.

(4) *FS No. 05-12-53-04*. Due to presence of unburned vegetation on-site and the minimal expectation of significant erosional processes related to the burning of vegetation at this site, it was determined that artifact collection treatment was not necessary in terms of a BAER watershed protection measure (*Note: artifact collection, however, may be an important future mitigation measure related to the Baldy Mesa OHV undertaking*). The primary BAER treatment undertaken at this site was the hand construction of a dirt berm (outside southern perimeter of identified site boundaries) to channel potential flows of water away from site deposits. This hand-shoveled channel adjacent to Road 3N24 was constructed by the writer following consultation with BAER Implementation Specialists and SBF Engineering staff. A Site Record update was prepared for this site.

(5) *CA-SBr-3430*. The narrow gauge railway site was identified in the initial BAER report but no treatment was proposed. Because of the massive landscape scale of the problem area, there are no known land treatments which are likely to be effective in protecting this resource, which is very much at risk from winter storm flows. However, an updated Site Record, which will provide baseline data from which future degradation due to erosion can be compared, was prepared.

(6) *FS No. 05-12-53-13*. The site was not identified, and no treatment was proposed, in the initial BAER report. It was subsequently determined that archaeological monitoring, to ensure that the historic wagon trail was not inadvertently impacted by implementation of BAER treatments at adjacent FS No. 05-12-53-01, would be required. The monitoring was conducted by the writer and an updated Site Record was prepared.

Heritage Resource Compliance Procedures

Pursuant to processual requirements of Section 106 of the NHPA (as authorized in the Regional Programmatic Agreement), based on information available at the filing of this report, all Turtle Fire burned area rehabilitation treatments have been considered and assessed for any possible effect to heritage resources. The protection of archaeological and historic resources through the implementation of BAER treatments described in this report are determined as a class of undertakings which fall within provisions of the Regional Programmatic Agreement (defined in Stipulation II.C and pursuant to Stipulation III.E) due to application of Standard Protection Measures (Attachment B: I.A(1), I.B(1)(2), I.C and I.E). Therefore, under these terms of the Programmatic Agreement, no further Section 106 review or consultation is required. However, results of these applications and subsequent monitoring inspections will require reporting in the SBF annual report (Stipulation VI.B[1][f]).

RECOMMENDATIONS

With one exception CA-SBr-4330), the burning of vegetation by the Turtle Fire has relatively minimal potential for damaging heritage resources. Most of the detected adverse effects to Baldy Mesa archaeological sites result largely from pre-existing conditions related to authorized use/maintenance of Road 3N24 and the OHV Trails, as well as rampant illegal OHV activity. Within context of required NRHP, Section 106, processes related to the Baldy Mesa Off-Highway Vehicle Plan undertaking, this report recommends that additional heritage resource identification efforts be undertaken and that mitigation measures for specific archaeological resources be developed as soon as possible.

ATTACHMENTS

- A. Initial Burned Area Report and Expenditure Authorization
- B. Archaeological Site Records
- C. Photographs of BAER Treatments

**A SUMMARY OF FINDINGS AND
RECOMMENDATIONS FOR EMERGENCY
REHABILITATION FOR HERITAGE RESOURCES
IMPACTED BY THE 1999 WILLOW FIRE,
SAN BERNARDINO NATIONAL FOREST, CALIFORNIA**

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BURNED AREA EMERGENCY REHABILITATION TEAM

WILLOW FIRE

HERITAGE RESOURCES ASSESSMENT

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Description of the Emergency:

On August 28, 1999, the Willow Fire started on the Mountaintop Ranger District near the junction of Willow Creek and FS road 3N34.3. It was fully contained on September 10, 1999 after burning over 64,000 acres. The fire perimeter burned several watersheds including Deep Creek, Mojave River, Rabbit Lake, and Lucern Valley. The Forest lands impacted by the Willow Fire Incident are administered by the Mountaintop Ranger District, San Bernardino National Forest. Private and Bureau of Land Management (BLM) lands were also affected but are not reported here.

Emergency suppression measures included the use of bulldozers, fire engines, hand crews and aircraft. Emergency watershed rehabilitation measures are also proposed at specific localities. For purposes of heritage resources impact analysis, the "Area of Potential Effect" (APE) for the Willow Fire is located within the combined perimeter of the fire burned area, locations of suppression or rehabilitation actions, and areas potentially impacted by indirect fire effects (i.e., flooding, debris flows, etc.).

Research has shown that wildfires clearly have the potential to damage, or destroy, heritage resources through: (1) direct effects of the fire; (2) ground disturbing suppression activities; and/or (3) erosive soil movement caused by subsequent storm precipitation. These impacts may completely destroy historic and archaeological resources or alter the context of surface and subsurface cultural remains vital to any scientific analysis and interpretation. Also, wildfires may increase the accessibility and visibility of archaeological site locations making them more susceptible to vandalism/artifact looting and unauthorized, illegal recreation activity. The Willow Fire has the potential to directly and indirectly impact heritage resources located in the area.

Heritage Resource Objective:

Specific objectives of this report are: (1) identify heritage resources impacted by burning from the 1999 Willow Fire on the San Bernardino National Forest; (2) identify cultural resources impacted by various emergency measures undertaken to suppress the fire; and (3) prohibit any damage to Class I Heritage Resources Sites from future fire-related erosion, debris flows, rehabilitation treatments and/or illegal artifact collecting (where risk is greatest).

Class I Heritage Resource Sites are defined as those historic or prehistoric resources determined eligible to the National Register of Historic Places (NRHP) per criteria in 36 CFR 60.4. Also, Forest Service Manual (FSM) 2361 direction states that Class II Sites, which are classified as heritage resource sites whose NRHP status is unknown or unevaluated, be afforded the same consideration and protection as Class I Sites.

Background Data:

The preliminary archival research conducted at the Forest Supervisor's Office and at the San Bernardino County Archaeological Information Center in response to the immediate need for heritage resource field work and analysis in association with fire suppression activities resulted in identifying both previous heritage resource surveys and heritage sites within the preliminary APE of the Willow Fire. Little of the surveyed areas have been in response to previous fires in the area as no site record updates have been completed for sites in nearly 20 years. Little data are available based on systematic survey/inventory in recent times. However, approximately 64 previously sites were known to be located within the APE. Figure HR1 [map of archaeology sites] shows the majority of heritage sites within the APE. The few surveys available were completed for project work in compliance with Section 106. Of the many heritage sites recorded within the burn area, most were recorded between twenty-five and thirty years ago or older. Out of the total 64 previously recorded sites within the burn area, initially, a total of 14 recorded heritage sites and two previously unrecorded sites were considered at risk for impacts from the fire, follow-up rehabilitation measures or threat by exposure to artifact collectors. Also, background research indicated the locations of other potential heritage resources (cabin sites, mining flumes, adits) not recorded or otherwise documented.

Heritage resource sites in the watersheds impacted by the Willow Fire are primarily associated with: (1) Native American (prehistoric) sites; (2) lode and placer gold mining activities (1860's-1930s); (3) early settlement and homesteading (1865-1880); (4) water storage facilities and conveyance systems (1925-1940). Prehistoric resources include occupation sites and focused activity areas such as rock paintings and food gathering and processing areas. Historic resources include mines, flumes, cabin/homesteads, stock pins and other cattle related features.

Fire History:

The Willow Fire is the largest such incident on the Forest. Smaller fires have burned portions of the same area over the last 90 years of recorded fire history. The most recent incident was the Devil Fire (1994), which over fifty percent (>5,000 acres) burned within the current incident.

Previous Flood History:

The Deep Creek watershed has historically been subjected to numerous catastrophic flood episodes where rampaging floods have scoured the canyons bottoms clean and caused untold damage to the communities down stream. Wildfires the size of the Willow Fire, particularly when followed immediately by a heavy rainy season, greatly increase the potential for flooding in the region. Major floods have been recorded since the late 1800's with catastrophic floods occurring in 1938, 1969, 1978 and 1993. It is clear that the various reoccurring flood torrents have greatly impacted the prehistoric and historic remains located within and adjacent to the stream bottoms in the region where as much as 5,000 years of prehistory is represented.

Heritage Resources:

For the purposes of this report, heritage resources considered for impacts by the Willow Fire may be categorized as:

- (1) Potential Resources Not Verified by Field Investigation,
- (2) Sites Determined Outside the APE,
- (3) Native American Sites, and
- (4) Historic Sites

Potential Resources Not Verified by Field Investigation - Archival research indicated locations of potential historic resources as indicated by the occurrence of dwellings, mines, corrals and other features 50 years old or older as indicated on historical maps. Field opportunities did not allow for these potential resource locations to be verified.

Sites Determined Outside the APE - Several sites were identified just outside the burn area. Once these sites were determined to be outside of the APE no further consideration was given.

Native American Sites - Numerous Native American or prehistoric sites have been previously recorded within the APE. The vast majority of these sites were recorded over 25 years ago with little current data known about their current condition. Many ethnographic place names of the Serrano are reported by Harrington (n.d.), particularly for the Deep Creek watershed.

Historic Sites - Several historic sites exist within the burn perimeter of the Willow Fire. Most often they are associated with prehistoric deposits. Few properties have been recorded in any detail and are associated with early ranching, homesteading or mining activities. These sites are also listed in Table HR1.

Description of the Emergency:

Table HR1 lists the sites under consideration which were felt to be at risk based on several factors including: direct impacts from the fire, deteriorated watershed (likelihood of increased erosion from loss of vegetation), increased visibility and access due to loss of vegetation cover. Previously recorded site record information was used to evaluate at risk conditions in consideration of known site attributes. Sites reported with abundant surface artifacts were considered more at risk than sites containing milling features or a single artifact attribute (i.e., lithics). Where possible sites were visited in the field to verify location and current condition of the cultural remains as well as the direct effects of the Willow Fire. If sites were not considered at risk using the above criteria no further consideration was given to proposing treatment.

A guiding principal of burned area rehabilitation is to regard archaeological sites and other materially fragile cultural resources as watershed elements; if post-fire conditions indicate erosion threats or other actual or potential watershed problems then cultural resources must receive special attention to ensure that their unique and irreplaceable values are given full consideration.

Cultural Resource Objective

The objective of this report is identify at risk properties and recommend treatment to prohibit any damage to significant heritage resources due to the increased runoff and erosion, and debris flows resulting from the effects of winter storms on the deteriorated watershed as well as from any rehabilitation measures offered to protect other resource values (soil, water, plant and animal) themselves. Any unknown heritage resource, or those which have not been evaluated as to their significance, would be classified as Class II Heritage Resource Sites. Manual direction states that all Class II sites be afforded the same consideration and protection as Class I sites (which have been evaluated as significant) until that evaluation takes place (FSM 2361).

Primary concerns about damage to significant heritage resources centers on ground disturbance directly impacting known and unknown cultural resources, the potential to bury surface and subsurface heritage resources to prohibit their discovery; and the possibility of soil movement which would change the context of the remains which would be vital to any scientific analysis or interpretation value that the resource may have. The burn may have an indirect impact of increasing the visibility of the site locations to make them more susceptible to vandalism or removal. It is assumed the same effects would hold true for any unknown heritage resources within the burn perimeter.

Reconnaissance Methods

Initially, a Heritage Team Leader (cultural resource advisor) was not available to coordinate with Fire Management about the significance, nature and locations of previously recorded sites. Once the Heritage team leader arrived on scene, efforts were made to coordinate with Fire Management and resource advisors to direct fire suppression activities away from sensitive resources as was the case with plant and animal habitat when feasible. Archaeological Surveyors were enlisted from other forests to assist in the fieldwork. As areas became safe to travel in Heritage

Team members afforded the opportunity to inspect areas where dozers had constructed lines during suppression activities. A monitoring form was developed to assist in determining impacts. When opportunity permitted members investigated the interior of the burn area in anticipation of BAER responsibilities. Photographs and notes were taken of sites visited to help determine which sites were at potential risk.

In addition to completing or updating site record forms when possible the Heritage Resources team provided (1) descriptions of the nature and extend of fire effects or fire suppression-related damages, if any, (2) assessments of the risks to cultural resources derived from increased erosion threats or other watershed-related fire effects, ad (3) recommendations for actions or treatments for resource stabilization or rehabilitation, including watershed treatments, if applicable.

TABLE HR1: KNOWN HERITAGE RESOURCES WITHIN THE PERIMETER OF THE WILLOW INCIDENT AT POTENTIAL RISK

SITE NUMBER (CA-SBR-)	MAP	SITE VISIT	SITE AT RISK	EMERGENCY CRITERIA	COMMENTS/TREATMENT
0294	Lake Ar	y	y	erosion/artifact visibility, rehab recommendations	Warm Springs, update site record, monitor rehab, surface collect diagnostic artifacts
0295	Lake Ar	n	potential	visibility	update site record
0449	Butler Pk	n	potential	erosion/visibility	surface artifacts at risk, update site record, monitor
0458	Lake Ar	y	y	erosion/artifact visibility	rock painting damaged by fire spauling, update site record
0475	Lake Ar	n	potential	erosion	update site record
0478	Lake Ar	n	potential	artifact visibility	update site record, monitor
0479	Lake Ar	n	potential	artifact visibility	update site record, monitor
0483	Lake Ar	n	potential	artifact visibility	update site record, monitor
0924	Butler Pk	y	y	from rehab recommendations	Hopi Spring, update site record, monitor rehab plan
2233	Butler Pk	y	y	visibility, from rehab recommendations	update site record, monitor rehab plan
5578	Butler Pk	y	y	from rehab recommendations	Coxey Meadow, update site record, monitor rehab plan
5579	Butler Pk	y	y	erosion	Willow Canyon, update site record, monitor rehab plan
9836	Fawnskin	y	y	erosion, from needed road maintenance	dip in road needed for FS road 3N56
Coxey Road	Butler Pk	y	y	from rehab recommendations	Coxey Rd Hist landmark, FS road 3N14; record
Deep Creek 1	Lake Ar	y	y	artifact/feature visibility	house pits and associated artifacts, record, monitor
Deep Creek 2	Lake Ar	y	y	from rehab recommendations	flume now used as part of the PCT, record

Emergency Findings:

Heritage resources Table HR1 outlines the treatment descriptions. More detailed explanations are provided in the Treatment Descriptions attached:

Heritage Resource Prescriptions:

Priority Treatment Sites (at greatest risk):

SBR-294...	COSTS \$22,942
SBR-458...	COSTS \$ 2,130
SBR-5578	COSTS \$21,800
SBR-5579.	COSTS \$18,513

Site Record Updates for Sites:

SBR-295	
SBR-449	
SBR-475	
SBR-478	
SBR-479 .	COSTS \$ 4,450
SBR-483	
SBR-Deep Creek 1	

Complete initial site records

SBR-Deep Creek 2	
SBR-Coxey Road	COSTS \$ 1,150

Sites in need of updates and monitoring as a result of rehab treatments proposed

SBR-924	
SBR-2233	
SBR-9836	COSTS \$ 1,050

Heritage resources specialist to coordinate results on the Forest

GS-11, 20 days @ 250/day = 5,000	COSTS.....	\$ 5,000
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GRAND TOTAL COSTS	\$77,035
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Heritage Resource Compliance Procedures for Rehabilitation Treatment Measures:

During the initial work for the Rehabilitation Report, all treatment measures identified at the filing of the initial report were assessed for any possible effect to cultural resources. This assessment is summarized in an Archaeological Reconnaissance Report (ARR# 05-12-52-##).

Heritage Resource Treatment Effectiveness Monitoring Plan

The objective of this plan is to monitor the effectiveness of the emergency treatment measures implemented to protect those heritage resource values at the sites identified during the current effort. Due to the fragile nature of the heritage resource values, it is imperative that if the measures do not achieve the desired results, then other measures be implemented at once. The basis of the monitoring plan will be verification visits utilizing a photo-monitoring program where treatment other than site record updates were completed. A total of three visits will be utilized. The first visit will be prior to the implementation of the treatment measures at which time photographs will be taken from designated points to establish a baseline site condition.

The next visit will occur after the first measurable precipitation event that would be expected to affect those values at risk. Another set of photographs will be taken from the same points, essentially duplicating the first set of photographs. These two sets will be compared to identify any changes in the site condition. The last visit will occur within two months after the first measurable event, and the same data collection and comparison methodology will be observed.

Because of the sensitivity of the resource, there can not be any deviation in the site condition due to the effects of the deteriorated watershed. If the monitoring indicates that the measures are not successful or insufficient to protect the values at risk, then additional measures will be formulated and implemented.

ATTACHMENT A

Initial Burned Area Report and Expenditure Authorization

ATTACHMENT B

Archaeological Site Records

ATTACHMENT C

Photographs of BAER Treatments